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Climatic, Hydrological, and Topographic Services
US ARMY AVIATION CENTER OF EXCELLENCE (USAAACE) WEATHER SUPPORT

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*This regulation supersedes Fort Rucker Reg 115-1, 25 May 07.

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CHAPTER 1

FORT RUCKER WEATHER OPERATIONS (FRWXOPS) INTRODUCTION

1-1. **FRWXOPS MISSION.** FRWXOPS provides meteorological support to Fort Rucker, the USAACE, US Army Combat Readiness Center, US Army Aviation Technical Test Center (USAATTC), and other assigned and tenant units at Fort Rucker listed in this regulation.

1-2. **FRWXOPS OVERVIEW.** FRWXOPS consists of personnel and equipment located at Cairns Army Airfield (AAF). Andalusia-Opp Weather Operations (AOWXOPS) consists of personnel and equipment located at South Alabama Regional Airport (RAP). Troy Weather Operations (TWXOPS) consists of personnel and equipment located at Troy Municipal Airport (MAP). All three units fall directly under the Air Combat Command (ACC), Langley Air Force base (AFB), Virginia. The three sites are led by a site manager (SM) and an assistant site manager (ASM) located at FRWXOPS. Locally, FRWXOPS falls under the Airfield Division, Directorate of Plans, Training, Mobilization, and Security (DPTMS).

1-3. **CONTACT INFORMATION.** FRWXOPS is located at building 30101D Wallace Street, Fort Rucker, AL 36362. The phone numbers are DSN 558-8385/8397 (commercial 334-255-8385/9397). The fax number is DSN 558-8521 (commercial 334-255-8521). AOWXOPS is located at 21861 Bill Benton Lane, building 40897, Andalusia, AL 36421. The phone/fax number is DSN 558-9259 (commercial 334-255-9259). TRWXOPS is located at 302 Airport Road, building L0006M, Troy, AL 36079. The phone number is DSN 558-0606 (commercial 334-255-0606). The fax number is 334-566-4806.

1-4. **FRWXOPS RESPONSIBILITIES.** This regulation outlines the responsibilities and services provided by FRWXOPS, AOWXOPS, and TWXOPS. FRWXOPS's primary tasks are recording and disseminating observations and producing forecasts for its Fort Rucker customers. AOWXOPS's and TWXOPS's primary tasks are recording and disseminating observations. These services are outlined in chapters 2 and 3. Reciprocal roles and responsibilities are outlined in chapter 4. All weather services provided by FRWXOPS are accomplished in accordance with (IAW) the duty priorities listed in appendix A. The general responsibilities of the Air Force and Army in regard to weather support are outlined in Army Regulation (AR) 115-10, Weather Support for the U.S. Army, 30 June 1996.

1-5. **RELEASE OF WEATHER INFORMATION TO NON-DOD AGENCIES/INDIVIDUALS.** FRWXOPS, AOWXOPS, and TWXOPS will not release weather information to non-DOD agencies or individuals without prior coordination with the Fort Rucker Installation Operations Center (IOC) for severe weather events or the Public Affairs Office (PAO) for routine weather information. The IOC or PAO will provide written evidence of coordination before any release of information.

1-6. **RELEASE OF WEATHER INFORMATION TO DOD AGENCIES/INDIVIDUALS.** FRWXOPS is required to release an operational report (OPREP) weather summary in the event of an aircraft mishap (Class A or B) or upon occurrence of a severe weather event where damage has occurred to the post. These weather summaries are prepared and disseminated to the appropriate agencies as soon as possible. In the case of an aircraft mishap (Class A or B), the weather summary will be sent to the affected unit's Safety Office. In the case of a severe weather event, the weather summary will be sent to the IOC. All OPREP weather summaries will be courtesy copied to the ACC, 26th Operational Weather Squadron (26 OWS), DPTMS, and 3d Research Corporation (3DRC). Basic climatology for Cairns AAF, South Alabama RAP, and Troy MAP is available on FRWXOPS's homepage at <http://www.rucker.army.mil/6weather/index.htm>. Any other request for data should be made to the ASM or SM, in writing or electronically, with a minimum of 3 hours notice.

CHAPTER 2

OBSERVING PRODUCTS AND SERVICES

2-1. **OVERVIEW.** FRWXOPS provides weather observing services at three locations within the USAACE local flight training area as described in Fort Rucker Regulation (Reg) 95-2, Directory of Aviation Training Facilities and Procedures, 14 May 2007. A basic weather watch (BWW) is conducted IAW Air Force Manual (AFMAN) 15-111, Surface Weather Observations, 19 December 2003, incorporating Change 1, 8 July 2008. A BWW means that weather personnel will recheck weather conditions at intervals not to exceed 20 minutes since the last observation/recheck to determine the need for a SPECI observation when certain criteria are occurring or are forecast to occur within 1 hour.

a. **FRWXOPS.** With the advent of the FMQ-19 automated observing system at Cairns AAF, FRWXOPS is now an automated reporting station. Weather technicians augment/back up the FMQ-19 IAW AFMAN 15-111 (reference appendix E) and perform a BWW 24 hours a day, 7 days a week, including federal holidays. The Cairns AAF observation is the official observation for the Class D (control tower is operational) or Class E (control tower is not operational) airspace.

b. **AOWXOPS.** Weather observers augment/back up a DOD-owned Automated Surface Observing System (ASOS) IAW AFMAN 15-111 and perform a BWW between the hours of 0830L-1630L, Monday through Friday, except federal holidays.

c. **TWXOPS.** Weather observers augment/back up a Federal Aviation Administration (FAA)-owned ASOS IAW AFMAN 15-111 and perform a BWW between the hours of 0630L-2030L, Monday through Friday, except federal holidays.

d. **Cooperative Weather Watch (CWW).** FRWXOPS has established a CWW with the air traffic control (ATC) towers at South Alabama RAP, Troy MAP, and all basefields and stagefields (reference the letter of agreement (LOA) dated 19 January 2007). ATC personnel will notify the observer/technician when they observe significant weather conditions that differ from those reported in official observations, and the observer/technician will incorporate that information into the local observation as appropriate. Pilot reports (PIREPs) are another crucial element of the CWW (reference paragraph 2-7). The CWW is detailed in paragraph 4-2b.

2-2. **SURFACE OBSERVATION PRODUCTS.** The FMQ-19 and ASOS provide METAR and SPECI weather observations IAW the criteria and guidelines in AFMAN 15-111. METAR observations are disseminated approximately 5 minutes before each hour. SPECI observations are disseminated whenever significant weather changes occur (reference appendixes B, C, and D for SPECI criteria). The Cairns METAR observation contains runway visual range (RVR) data reported from Runway 06 when visibility is ≤ 1 statute mile (SM) and/or when RVR decreases to less than 6,000 feet. Note: Locally, RVR will be reported for Runway 06 even when the active runway is not 06.

2-3. **SURFACE OBSERVATION EQUIPMENT.** FRWXOPS uses the FMQ-19 automated observing system to provide observing services to the Fort Rucker area. Additionally, there are several ASOSs and two Tactical Meteorological Observing Systems-Permanent (TMOS-Ps) in the local flying area that provide surface observations to FRWXOPS personnel.

a. **Fixed Meteorological Instrumentation.** The Air Force provides maintenance for the instrumentation and displays of all fixed meteorological equipment; however, there may be instances when various Fort Rucker agencies must assist in repairing equipment when an outage involves aspects that are beyond the responsibility of the Air Force (i.e., communications or power lines). The Air Force owns and maintains, through KMAR Industries, the following meteorological equipment:

Equipment	Measures	Cairns AAF	Troy MAP	South Alabama RAP
ML-17 ⁽¹⁾	Precipitation	X	X	X
Kestrel 4000 ⁽¹⁾	Temperature, dewpoint, windspeed, pressure	X	X	X
FMQ-19	Pressure, cloud height, winds, temperature, dewpoint, visibility, present weather, precipitation	X		
FMQ-13 ⁽²⁾	Windspeed/direction		X	

Note:

⁽¹⁾ Backup Weather Equipment. Measurements taken by the duty observer/technician are a backup to other weather equipment; pressure and winds will be considered as estimated.

⁽²⁾ FRWXOPS is in the process of signing over this equipment from the Air Force to the Army.

b. ASOS. The Army owns several ASOSs in the local area, listed below. Maintenance is provided by the Air Force through KMAR Industries. TWXOPS augments/backups up an FAA-owned and -maintained ASOS at Troy MAP. AOWXOPS augments/backups up a DOD-owned and -maintained ASOS at South Alabama RAP. Additionally, the Air Force owns an ASOS at Lowe Army Heliport (AHP); this ASOS is not augmented by weather personnel. The ASOS provides continuous readouts of pressure, altimeter, temperature, dewpoint, wind direction and speed, present weather, thunderstorms, precipitation, visibility, cloud height, and cloud amount (up to 12,000 feet). For ASOS limitations, reference paragraph 2-6d. Data from these ASOSs may be accessed on very high frequencies (VHF) or telephonically. The ASOS's VHF frequencies and telephone numbers are listed below.

Location	ICAO	VHF Frequency	Telephone Number
South Alabama RAP, AL	K79J	134.875	334-222-9770
Lowe AHP, AL	KLOR	118.250	334-255-4013
Hanche AHP, AL	KHEY	141.375	334-255-5428
Greenville MAP, AL	KPRN	120.000	334-383-9676
Eufaula (Weedon Field), AL	KEUF	19.325	334-687-5596
Floral MAP, AL	K0J4	124.175	334-858-4843
Bonifay (Tri-County) MAP, FL	K1JO	None	850-547-1431
Troy MAP, AL	KTOI	120.925	334-566-3081

c. Army-Owned Sensors. The 1st Battalion, 11th Aviation Regiment (1-11th Avn Regt) owns FMQ-13 wind measuring equipment at most basefields and stagefields (reference appendix K). Air Force-owned, -maintained, and -calibrated equipment takes precedence at airfields where redundant instrumentation is available.

d. TMOS-P. The Air Force, through KMAR Industries, maintains two Army-owned TMOS-Ps. These ASOS-like sensors are located at Shell AHP and Molinelli Range. Data from the TMOS-P cannot be remotely accessed. Only the respective towers have a continuous display of the data.

e. The priority for equipment maintenance/restoral is as follows:

- (1) Open Principal User Processor/Radar.
- (2) FMQ-19.
- (3) ASOS (at non-dually instrumented locations).
- (4) ASOS (at dually instrumented locations).
- (5) TMOS-P.

- (6) FMQ-13 at Troy MAP.

2-4. **SURFACE OBSERVATION DISSEMINATION.** Surface observations are disseminated locally and long line. Procedures vary at each location and are described below.

a. Local Dissemination.

(1) FRWXOPS. The primary means of receiving the Cairns observation is through the local area network (LAN) by linking to the local weather data set (LWDS) on FRWXOPS's homepage. The homepage may also be reached via a hyperlink on the Fort Rucker homepage. The local weather network system (LWNS) terminals of the new tactical forecast system (NTFS) provide local and area observations; forecasts; weather watches, warnings, and advisories, and PIREPs to ATC agencies at Cairns AAF (Army radar approach control (ARAC), HUB Radio, and tower) and the towers at Lowe AHP, Shell AHP, and Hanchey AHP. Observations are also transmitted to Cairns agencies via Cairns closed circuit television (CCTV) network on Channel 5. CCTV is a backup for agencies at Cairns AAF. When the LAN, NTFS, and CCTV are all inoperative, Cairns weather technicians will relay observations to the Cairns ATC facilities and Lowe AHP, Shell AHP, and Hanchey AHP control towers telephonically.

(2) AOWXOPS and TWXOPS. The primary means of receiving the South Alabama RAP and Troy MAP observations is via the airfield's ASOS. If the ASOS is inoperative, observers will relay the observations to the airfield's respective tower telephonically.

b. Long Line Dissemination.

(1) FRWXOPS. IAW Air Force directives, FRWXOPS technicians augment/back up the FMQ-19 observations (when required), and long line dissemination is accomplished via NTFS. In the event of an NTFS outage, observations will be transmitted long line via the Joint Air Force and Army Weather Information Network (JAAWIN) Web server. In the event of an LAN outage, the observation will be transmitted by another weather station or OWS as prescribed in AFMAN 15-111.

(2) AOWXOPS. IAW Air Force directives, AOWXOPS observers augment/back up the ASOS observations (when required), and long line dissemination is accomplished via the ASOS. In the event of an ASOS outage, the observation will be transmitted long line via the JAAWIN Web server. In the event of an LAN outage, the observation will be transmitted by another weather station as prescribed in AFMAN 15-111.

(3) TWXOPS. IAW Air Force directives, TWXOPS observers augment/back up the ASOS observations (when required), and long line dissemination is accomplished via the ASOS. In the event of an ASOS outage, the observation will be transmitted long line via the JAAWIN Web server. In the event of an LAN outage, the observation will be transmitted by another weather station as prescribed in AFMAN 15-111.

c. Additional Observation Dissemination.

(1) FRWXOPS. Cairns technicians include ceiling and visibility reports from Lowe AHP, Shell AHP, and Hanchey AHP towers in the LOCAL remarks of the observation if the reported ceiling is $\leq 1,000$ feet, the visibility is ≤ 3 SM, and the reported ceiling or visibility is different from conditions observed at Cairns AAF.

(2) Current ASOS Weather Observations. Aircrews with a VHF radio or telephone may access the current ASOS weather observation at area locations with an ASOS (reference paragraph 2-3b). Systems may not be augmented and should be used for non-operational planning information only. The only official observation for Lowe AHP and Hanchey AHP is the Cairns AAF observation.

2-5. **SURFACE OBSERVATION CODE.** Official surface weather observation abbreviations and codes are documented in AFMAN 15-111. Examples of a long line, LWDS, LWNS, and CCTV METAR observation display follow below.

- a. Example of a Long Line METAR Observation:

KOZR (1) 181955Z (3) AUTO (4) 24015G30KT (5) 2SM +TSRA (6) SCT005 BKN020 OVC250 (7) 29/27 (8) A2990 (9) RMK AO2 SLP195 T01950092 10196 20105 58011 (10)

- b. Example of the LWDS Local Weather Display (observation in bold below):

Local Weather Data Set (LWDS) - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites Media

Address http://weather.rucker.army.mil:82/pv/local_top.htm Go Links

[Product Viewer](#) [Home](#) [A/N](#) [ByCriteria](#) [Vector Graphic](#) [Satellite](#) [JAAWIN](#) [Help](#)

Observation and Forecast KOZR ▾

Received 18/1955Z
KOZR (1) METAR (2) 1955Z (3) AUTO (4) 24015G30KT (5) 2 +TSRA (6) SCT005 BKN020 OVC250 (7) 29/27 (8) ALSTG 29.90 (9) RMK AO2 SLP195 T01950092 10196 20105 58011 PA -84 DA +613 (10)

Received 31/1508Z
KOZR FCST AMD 3115-0110 28006KT 6 HZ FEW015 SCT025 BKN250
ALTIMETER29.85INS
TEMPO 16-21 29006KT 4 -TSRA BKN035CB BKN100 ALTIMETER29.89INS
BECHG 08-09 34003KT 5 BR FEW008 SCT020 ALTIMETER29.86INS TEMP 33C AT 2000Z TEMP 24C AT 1100Z COR 1507 08/SLS

Other Weather Information KOZR ▾

Internet

c. Example of the LWNS Local Weather Display (observation in bold below):



d. Example of the CCTV Weather Observation Display:

KOZR <small>(1)</small> 24015G30KT <small>(5)</small> SCT005 BKN020CB OVC250 <small>(7)</small> 29(84F)/27 <small>(8)</small> ALSTG 29.90 <small>(9)</small> PA -84 (RMK) <small>(10)</small> 55/CH <small>(12)</small>	METAR <small>(2)</small>	(3) 18/1955Z (6) 2SM +TSRA (11) RH: 89% DA +613																
<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">FCST</td> <td style="text-align: center;">MAX</td> <td style="text-align: center;">MAX</td> <td style="text-align: center;">FL010</td> </tr> <tr> <td style="text-align: center;">PERIOD</td> <td style="text-align: center;">TEMP</td> <td style="text-align: center;">PA</td> <td style="text-align: center;">WINDS</td> </tr> <tr> <td style="text-align: center;">PM</td> <td style="text-align: center;">32C</td> <td style="text-align: center;">+400</td> <td style="text-align: center;">27010KT</td> </tr> <tr> <td style="text-align: center;"><small>(13)</small></td> <td style="text-align: center;"><small>(14)</small></td> <td style="text-align: center;"><small>(15)</small></td> <td style="text-align: center;"><small>(16)</small></td> </tr> </table>	FCST	MAX	MAX	FL010	PERIOD	TEMP	PA	WINDS	PM	32C	+400	27010KT	<small>(13)</small>	<small>(14)</small>	<small>(15)</small>	<small>(16)</small>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> (CHECK MEF FOR ## AMMENDMENTS) <small>(17)</small> </div> <div style="width: 45%;"> (CHECK MEF FOR ## UPDATES) <small>(18)</small> </div> </div> <div style="text-align: center; margin-top: 10px;"> CHECK LWDS OR MEF FOR WEATHER ALERTS <small>(19)</small> </div>	
FCST	MAX	MAX	FL010															
PERIOD	TEMP	PA	WINDS															
PM	32C	+400	27010KT															
<small>(13)</small>	<small>(14)</small>	<small>(15)</small>	<small>(16)</small>															

Notes:

- (1) Location Identifier. This observation is from Cairns AAF (KOZR).
- (2) Type of Observation. This observation is a METAR.
- (3) Date/Time Group. The date/time of this observation is the 18th at 1955Z.
- (4) This observation is from an automated station (AUTO).
- (5) Wind Direction/Speed. In this observation, the winds are from 240 (southwest) at 15 knots with gusts to 30 knots.
- (6) Visibility/RVR/Present Weather. In this observation, the visibility is 2 SM, and the present weather is a thunderstorm (TS) with moderate rain (+RA). Note: RVR, if applicable, would be reported in this group. RVR for Runway 06 is reported when prevailing visibility is ≤ 1 SM and/or when RVR decreases to less than 6,000 feet. Note: Locally, RVR will be reported for Runway 06 even when the active runway is not 06.
- (7) Sky Condition. In this observation, the sky condition is SCT005 BKN020 OVC250. In the LWNS display, the ceiling is also reported (CIG020).

(8) Temperature/Dewpoint. In this observation, the temperature is 29 degrees Celsius (84 degrees Fahrenheit), and the dewpoint is 27 degrees Celsius.

(9) Altimeter. In this observation, the altimeter (A or ALSTG) is 29.90.

(10) Remarks. In this observation, there are several remarks. AO2 indicates that the observation is automated; AO2A would indicate that the observation is being augmented by the weather technician. SLP195 indicates that the sea level pressure is 1019.5 millibars. T01950092, 10196, and 20105 are temperature groups generated by the FMQ-19; these groups are relatively meaningless to aviation but are automatically reported by the FMQ-19. Finally, 58011 is the pressure tendency group, indicating the trend in pressure over the past 3 hours. On the LWDS and LWNS displays, the pressure altitude (PA) and density altitude (DA) are included in the remarks section. On CCTV, the only remarks that will be displayed are those that are relevant to aviation.

(11) Relative Humidity (RH). In this observation, the RH is 89 percent. RH is only reported on CCTV.

(12) Time/Initials. This observation was taken at 55 past the hour by CH. This is only reported on CCTV.

(13) Planning Data: Forecast Period. In the example above, the next flying period is the PM. This is only reported on CCTV.

(14) Planning Data: Maximum Temperature. In the example above, the maximum temperature forecast for the PM period is 32 degrees Celsius. This is only reported on CCTV.

(15) Planning Data: Maximum PA. In the example above, the maximum PA for the PM period is + 400 feet. This is only reported on CCTV.

(16) FL010 Winds. In the example above, the winds at FL010 are 270 degrees at 10 knots. This is only reported on CCTV.

(17) Check the mission execution forecast (MEF) for ## amendments (where ## equals the number of amendments), if applicable. This message will appear if there are any amendments to the forecast. This is only reported on CCTV.

(18) Check the MEF for ## updates (where ## equals the number of updates), if applicable. This message will appear if there are any updates to the forecast. This is only reported on CCTV.

(19) Check the LWDS or MEF for weather alerts, if applicable. This message will appear if there are any weather watches, warnings, and advisories in effect. In the example above, there are weather watches, warnings, or advisories in effect. This is only reported on CCTV.

2-6. OBSERVING LIMITATIONS. The official points of observation at Cairns AAF, South Alabama RAP, and Troy MAP are, respectively, the FMQ-19 sensor and the ASOS sensors. Buildings located at Cairns AAF, South Alabama RAP, and Troy MAP limit the observer's ability to take completely representative weather observations when backing up the FMQ-19 and ASOS.

a. FRWXOPS Limitations.

(1) The backup observation point is located approximately 30 feet off the southeast corner of building 30101. From this vantage, the Cairns technician does not have a full 360 degree view of the airfield. Buildings obstruct the technician's view of the aerodrome from the southwest through the northwest. This limits the technician's ability to accurately determine sector and prevailing visibility when backing up the FMQ-19.

(2) Emergency evacuation of the weather station temporarily disrupts observing and forecasting services. Technicians relocate to the alternate operating location (AOL): a location with a Class A telephone, a

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computer with an LAN connection, and a view of the airfield (normally building 30311, the FLATIRON facility, per the LOA dated 25 February 2008). Observing and forecasting services will be available at the AOL. The phone number at the AOL is DSN 558-8535 (commercial 334-255-8535). While operating from the AOL, backup equipment may be used to record the observation.

(3) Pilot to metro service (PMSV) is subject to the limitations inherent in the use of VHF and ultra high frequencies (UHF). Pilots in the local area may not be able to reach the FRWXOPS technicians via PMSV due to various circumstances that affect the signal from reaching the radio tower. Reference paragraph 3-5 for the PMSV frequencies and backup procedures. Backup procedures are documented in the LOA dated 24 March 2007.

b. AOWXOPS Limitations.

(1) The backup observation point is located approximately 30 feet west of the tower. From this vantage, the AOWXOPS observer does not have a full 360 degree view of the airfield. Buildings obstruct the observer's view of the aerodrome from the south through the southeast. This limits the observer's ability to accurately determine prevailing and sector visibility when backing up the ASOS.

(2) Emergency evacuation of the weather station temporarily disrupts observing services. Observers relocate to the AOL: a location with a Class A telephone, a computer with an LAN connection, and a view of the airfield (normally the Flight Briefing Office (FBO) building, per the LOA dated 8 February 2008). Although the ASOS will not be augmented during an evacuation, observing support will be provided at the AOL. The phone number at the AOL is 334-427-8466. While operating from the AOL, backup equipment may be used to record the observation.

c. TWXOPS Limitations.

(1) The backup observation point is located approximately 30 feet west of the tower. From this vantage, the TWXOPS observer does not have a full 360 degree view of the airfield. Buildings obstruct the observer's view of the aerodrome from the northeast through the east. This limits the observer's ability to accurately determine prevailing and sector visibility when backing up the ASOS.

(2) The ASOS wind sensor is located along an abandoned north-south runway. ASOS winds may not be representative for fixed wing operations or operations on other parts of the airfield.

(3) Emergency evacuation of the weather station temporarily disrupts observing services. Observers relocate to the AOL: a location with a Class A telephone, a computer with an LAN connection, and a view of the airfield (normally the FBO building, per the LOA dated 8 February 2008). Although the ASOS will not be augmented during an evacuation, observing support will be provided at the AOL. The phone number at the AOL is 334-566-7457. While operating from the AOL, backup equipment may be used to record the observation.

d. General Limitations of ASOS/TMOS-P.

(1) Cloud height and coverage are determined by a laser beam ceilometer and are dependent on what is directly above the sensor. The ASOS/TMOS-P attempts to determine sky condition but may provide an incorrect cloud coverage amount if clouds are stationary or moving very slowly. Additionally, the ASOS/TMOS-P systems cannot determine cloud height above 12,000 feet.

(2) Visibility is determined using a forward scatter visibility meter; ASOS/TMOS-P reported values may be highly variable and not representative for the entire airfield.

(3) The freezing rain sensor does not report occurrence until ice has accumulated to ≥ 0.01 inch. Aircraft operations may be affected before the ASOS/TMOS-P reports freezing rain occurrence (i.e., icing).

(4) An ASOS/TMOS-P may not detect all thunderstorms or hail occurrences. An ASOS/TMOS-P cannot detect virga (precipitation not reaching the ground), sector visibility, tower visibility, or tornadoes.

e. General Limitations of the FMQ-19. As with any automated system, the FMQ-19 has inherent weaknesses. However, FRWXOPS has developed procedures to mitigate any weaknesses of the system.

(1) Cloud height and coverage are determined by a laser beam ceilometer, which looks at the small portion of the atmosphere directly above the sensor. Algorithms use time averaging and weighting in order to determine the sky condition. This sensor-derived sky condition is considered to be functionally equivalent to a manually-generated sky condition; the sensor samples the atmosphere directly above the sensor, and the algorithms calculate the sky condition which simulates that of the entire celestial dome. The FMQ-19 measures cloud heights between 100 feet and 25,000 feet.

(2) Visibility is determined at the sensor group, so it may not always be representative of the entire airfield. Furthermore, the FMQ-19 cannot report visibility less than 1/4 SM.

(3) The FMQ-19 may not detect all thunderstorms and lightning and cannot report thunderstorm and lightning remarks. Furthermore, the system cannot detect hail, virga, sector visibility, tower visibility, volcanic ash, cloud types, or tornadoes/funnel clouds/waterspouts.

(4) Due to the characteristics of the algorithms, the FMQ-19 may be slow to respond and report accurate sky condition, visibility, and present weather during periods of rapidly changing weather conditions.

f. Other Equipment Limitations.

(1) Due to the location of the TMOS-P at Molinelli Range, the reported winds are sometimes too high because of channeling effects.

(2) Due to unknown reasons, the reported winds from the Shell TMOS-P are sometimes too high.

(3) Because the FMQ-13 at Runkle Stagefield is 70 feet high, the surface windspeeds will be lower than the sensor-reported values.

(4) The ASOS at Troy MAP is located at the end of the runway rather than the center, so the winds are not always representative.

2-7. **PILOT REPORTS (PIREPs).** The local training area is approximately 32,000 square miles and is a data-sparse region in which weather can vary widely over short distances. PIREPs are an extremely important source of weather information provided by aircrews operating in the local area. The best and most reliable source of current weather information is the PIREP.

a. Criteria. FRWXOPS disseminates 100 percent of PIREPs received to post and national agencies for all phenomena reported by aircraft.

b. PIREP Format and Dissemination. At a minimum, a PIREP must contain location, time, altitude, type of aircraft, and at least one other weather element such as winds, temperature, icing, turbulence, low level wind shear (LLWS), visibility, and present weather in order to be disseminated. However, any reports of significant weather elements are useful and important to weather technicians. PIREPs may be reported to the weather station via PMSV radio, or they may be relayed to the weather station through ATC agencies. This information is available via the LWNS terminals of the NTFS at ARAC, HUB Radio, and the ATC towers at Cairns AAF, Hanchey AHP, Shell AHP, and Lowe AHP. Additionally, PIREPs may be viewed via the LWDS on the FRWXOPS homepage. All disseminated PIREPs appear on the LWNS/LWDS for at least 1 hour. Technicians also include PIREPs, as appropriate, in flight weather briefings. An example of a PIREP, as it would appear in the LWNS/LWDS local weather display, follows.

c. Example of a PIREP:

KOZR (1) UA (2) /OV KHEY180010 (3) /TM 1310 (4) /FL005 (5) /TP B06 (6) /SK 005BKN-TOP009 (7) /WX FV03SM BR (8) /TA 21 (9) /WV 20005KT (10) /TB CONT MOD (11) /IC NEG (12) /RM LOW-LEVEL WIND SHEAR (LLWS) +-10KT 009-005 DURD (13)

Notes:

- (1) Location Identifier. In the example above, KOZR is the location identifier.
- (2) Type of Report. In the example above, the type of report is UA, or routine report. A priority report is sent for certain criteria and is identified by the header UUA.
- (3) /OV is the location of the reported phenomenon. In the example above, the phenomenon is reported 10 miles at 180 degrees (south) of KHEY.
- (4) /TM is the time the phenomenon was reported. In the example above, the time is 1310Z.
- (5) /FL is the flight level (mean sea level (MSL)) at which the phenomenon was reported. In the example above, the flight level is 500 feet.
- (6) /TP is the aircraft type. In the example above, the aircraft type is a B06. Note: A TH-67 would be recorded as a B06 in PIREP code.
- (7) /SK is the sky condition (MSL). In the example above, the sky condition is broken at 500 feet with tops at 900 feet. Note: If the tops are unknown, the sky condition would be annotated BKN005-TOPUNKN.
- (8) /WX is the visibility/present weather group. In the example above, the flight visibility is 3 SM, and there is mist (BR).
- (9) /TA is the temperature. In the example above, the temperature is 21 degrees Celsius.
- (10) /WV is the wind direction and speed. In the example above, the winds are from 200 degrees (south-southwest) at 5 knots. Note: Wind direction is magnetic.
- (11) /TB is turbulence. In the example above, there is continuous moderate turbulence.
- (12) /IC is icing. In the example above, there is no icing reported.
- (13) /RM is the remarks section. In the example above, there is LLWS of +/- 10 knots during descent (DURD) from 900 to 500 feet. Any plain language remarks may also be entered in this section.

CHAPTER 3

FORECAST PRODUCTS AND SERVICES

3-1. **OVERVIEW.** Forecasting services are available from 0000L Monday through 0100L Saturday or until termination of USAACE local flying. When USAACE flying is not scheduled, forecasting services may not be available. Should forecasting services not be available, customers should call the 26 OWS for flight weather briefings (DSN 781-4775 or commercial 866-223-9328, toll free). For forecasting support outside of normal forecast hours, a written request should be made to the ASM or SM 24 hours in advance.

a. FRWXOPS produces various forecasts to assist mission planning, training operations, and resource protection. FRWXOPS is responsible for MEFs and DD Form 175-1 flight weather briefings for flights originating from Cairns AAF. FRWXOPS provides flight weather information to authorized aircrew members and pilots upon request. Also, flight weather briefing products are produced for display on the FRWXOPS homepage, and some are also displayed on CCTV. FLATIRON search and rescue crews are supported on nontraining missions as a priority service.

b. The 26 OWS, located at Barksdale AFB, Louisiana, produces the terminal aerodrome forecast (TAF) for Cairns AAF, in addition to regional scale weather forecasts and analysis for the southeastern US. The 26 OWS, in conjunction with FRWXOPS, is responsible for resource protection in the form of weather watches, warnings, and advisories. In the event that the 26 OWS is unable to perform any of these services, FRWXOPS will act as a backup to 26 OWS support. FRWXOPS provides “eyes forward” for the 26 OWS.

3-2. **FORECAST PRODUCTS.** The MEF and local DD Form 175-1 flight weather briefing are issued at the beginning of each flying period and are valid until the end of that period. Reference paragraph 3-3c for the issue and valid times for each flying period. These products are primarily disseminated via the Fort Rucker LAN on the FRWXOPS homepage. The MEF is also displayed on Cairns CCTV Channel 6 as a rotating PowerPoint presentation. In the event of an LAN outage and/or a CCTV outage, the MEF will be faxed.

a. MEF.

(1) The MEF, which is for visual flight rules (VFR) flights within 60 nautical miles (NM) of Cairns AAF, focuses on weather conditions affecting the USAACE local flight training area and is tailored to specific criteria that impact local aviation operations. It contains a separate forecast for each of the seven MEF forecast areas (reference appendix I) within the USAACE local flying area (Vanguard North, Vanguard Central, Vanguard South, Bearcat, Hawk, Fixed Wing, and Goldfish), and is amended or updated as required (reference appendix J).

(2) The format of the MEF may change occasionally based on local requirements and feedback from aviators. However, the MEF will always contain the forecasted information below. All times on the MEF are in Zulu time, except as noted.

(a) Present weather such as precipitation and obstructions to visibility.

(b) Surface winds (magnetic).

(c) Aviation hazards such as LLWS, icing, and turbulence. Note: Turbulence intensity in the MEF is for category I aircraft (gross weight < 12,500 lbs).

(d) Thunderstorms and the amount of coverage. Coverage amounts are Isolated (1 percent-24 percent), Few (25 percent-49 percent), Scattered (50 percent-74 percent), and Numerous (>74 percent).

(e) Sky condition (above ground level (AGL)).

(f) Flight level winds provided in 1,000-foot intervals from 1,000 feet to 8,000 feet. Wind data is valid for the midpoint of the flying period.

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- (g) Flight level temperatures (in degrees Celsius).
 - (h) The forecast maximum and minimum temperatures (in degrees Celsius) for the period for Cairns AAF and for the local flying area.
 - (i) The forecast maximum PA and DA (in feet) for the period for Cairns AAF and for the local flying area.
 - (j) Solar and lunar data, including the end evening nautical twilight, sunrise, sunset, moonrise, moonset, percent of maximum lunar illumination, and lunar azimuth and elevation. These events are listed in local time. Lunar data is valid for 2400L.
 - (k) Any weather watches, warnings, or advisories that are in effect, or will be in effect, at any time during the period.
 - (l) The amendment or update number and time of issuance for any amendments or updates issued to the MEF.
 - (m) Planning data for the next period. The planning data will include the forecast maximum temperature (in degrees Celsius) and PA (in feet) for Cairns AAF, along with a forecast of VFR or instrument flight rules (IFR) for each MEF forecast area.
- (3) The MEF is continuously monitored for accuracy and is amended as needed IAW the specification and amendment criteria listed in appendix J.
- b. DD Form 175-1. The standard flight weather briefing is a DD Form 175-1. FRWXOPS produces a local DD Form 175-1, which is for IFR flights within 100 NM of Cairns AAF, for aircrews filing IFR flight plans. This product is primarily disseminated via the Fort Rucker LAN on the FRWXOPS homepage. The local DD Form 175-1 is posted to the homepage at the beginning of each period with valid times concurrent with the MEF and is updated every hour. This DD Form 175-1 contains weather forecasts for IFR flights to various airfields (both military and civilian) near Fort Rucker. This DD Form 175-1 briefing may not have information in all blocks, as it is available elsewhere. Reference appendix G for a breakdown of the local DD Form 175-1. If a customer requires a DD Form 175-1 for airfields not listed on the DD Form 175-1, contact the FRWXOPS technician for assistance. Sometimes, technicians will use all stops (A/S) rather than a list of individual location identifiers. Note that A/S refers to all stations within 100 NM of Cairns AAF when all forecast conditions are similar. Technicians provide flight weather briefings over-the-counter, over the telephone, via e-mail, or by fax. For routine or scheduled flights, aircrews should submit their DD Form 175-1 request at least 1 hour prior to departure for the timeliest service. FRWXOPS technicians perform other duties that take priority over routine weather briefings (reference appendix A). This policy does not apply to emergency FLATIRON flights.
- c. MEF/DD Form 175-1 Updates/Amendments. The MEF/DD Form 175-1 will be updated/amended IAW FRWXOPS' duty priorities (reference appendix A) when it becomes evident that the forecast is not on target and when the criteria of appendix J is met. When the MEF/DD Form 175-1 is amended, FRWXOPS will relay all amendments to Cairns Base Operations and print copies for the students at Cairns AAF. Also, the amendment is posted to the FRWXOPS homepage, as well as Cairns CCTV. Cairns Base Operations personnel will notify Cairns Tower, Lowe/Hanchey/Knox/Shell/USAATTC/FLATIRON Operations, and HUB Radio. HUB Radio will contact all active stagefields (to include Molinelli Tower) and airborne crews. Furthermore, when the basefields' Operations sections call for a weather void time, FRWXOPS will brief them on any amendments.
- d. TAF. Every 8 hours, the 26 OWS produces a TAF for a 5 NM radius centered on Cairns AAF, valid for 24 hours. The 26 OWS and FRWXOPS will coordinate to ensure the observation/forecast for Goldfish is consistent. The TAF is available to ATC agencies via the LWNS displays and to other customers via the LWDS on the FRWXOPS homepage.

3-3. FORECAST PRODUCT DISSEMINATION TO AIRCREWS.

a. The primary means of disseminating forecast products to aircrews is via the Fort Rucker LAN on the FRWXOPS homepage. The FRWXOPS homepage contains various products and links to products depicting current and forecast weather worldwide, to include radar imagery, satellite imagery, surface observations, and TAFs. All locally generated products are also posted to the homepage. These local products are described below.

(1) The LWDS provides the current observation; TAF; all watches, warnings, and advisories in effect, and all PIREPs disseminated by FRWXOPS within the last 60 minutes.

(2) The Hourly Roundup is updated every hour and contains an update on the presence of potential aviation hazards (winds, IFR conditions, thunderstorms, and lightning) within each MEF forecast area in a red/amber/green format.

(3) The AM, PM, and N1 MEFs are posted to the Web site at 0500 CDT (0445 CST), 1045 CDT/CST, and 1715 CDT (1700 CST). Between postings, the MEF will be amended or updated as appropriate, and the amendments or updates will be posted to the Web site.

(4) The AM, PM, and N1 MEF CCTV slides are posted to the Web site at 0500 CDT (0445 CST), 1045 CDT/CST, and 1715 CDT (1700 CST). Between postings, the MEF slides will be amended or updated as appropriate, and the amendments or updates will be posted to the Web site and IAW appendix J.

(5) The AM, PM, and N1 local DD Form 175-1 is posted to the Web site at 0500 CDT (0445 CST), 1045 CDT/CST, and 1715 CDT (1700 CST). Between postings, the local DD Form 175-1 will be updated every hour, and the updates will be posted to the Web site and IAW appendix J.

(6) Regional observations and TAFs are also shown on the Web site and are continuously updated.

(7) The CCTV observation is displayed on the Web site. This observation is displayed in the same format as the CCTV observation as is updated every 60 seconds.

(8) Climatology data for Cairns AAF, South Alabama RAP, and Troy MAP is available on the Web site.

(9) The 7-day stoplight forecast is posted to the Web site every Monday, Wednesday, and Friday morning. This product is for planning, non-operational purposes only.

(10) Night vision goggle (NVG) information is posted to the Web site each Monday morning for the next week. Additionally, a 30-day illumination planning chart is posted.

(11) Hurricane information may also be found on the Web site when a storm is impending. When a storm is threatening, updates are posted every 6 hours under the General Weather → Hurricane section.

b. CCTV. FRWXOPS utilizes CCTV as an alternate method of providing weather information for Cairns AAF. Cairns CCTV Channel 4 displays the current local, regional, or national radar loop; Cairns CCTV Channel 5 displays the current observation, and Cairns CCTV Channel 6 displays the current MEF in a rotating PowerPoint slideshow. CCTV should be used for backup purposes only.

c. Briefing Schedule. The issue times and valid times of forecast products for each period are as follows:

(1) AM Period (CDT): Issued at 0500L; valid 0600L-1230L
AM Period (CST): Issued at 0445L; valid 0600L-1200L

(2) PM Period (CDT): Issued at 1045L; valid 1230L-1900L
PM Period (CST): Issued at 1045L; valid 1200L-1830L

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- (3) N1 Period (CDT): Issued at 1715L; valid 1900L-0230L
N1 Period (CST): Issued at 1700L; valid 1830L-0230L

d. Backup Procedures. The primary means for receiving aviation weather forecasts is via the Fort Rucker LAN on the FRWXOPS homepage. The alternate source for Cairns AAF is CCTV. In the event that both the homepage and CCTV are non-operational, the FRWXOPS technicians will fax the MEF and DD Form 175-1 to the Base Operations section of each basefield. Base Operations is then responsible for disseminating the flight weather briefing to those sections without access to the data. Expect delays when the briefings must be faxed to multiple organizations.

3-4. **RESOURCE PROTECTION PRODUCTS.** The 26 OWS and FRWXOPS issue weather watches, weather warnings, terminal weather advisories (TWAs) (forecast and observed), and area weather advisories (AWAs) (forecast and observed). All watches, warnings, and advisories are issued IAW AFMAN 15-129, Air and Space Weather Operations – Processes and Procedures, 21 June 2004. Reference appendix F for weather watch, warning, and advisory criteria. Post officials and aviators can use these products to make informed decisions about resource protection and flight training operations.

a. Weather Watches. The 26 OWS issues forecast weather watches for a 60 NM radius centered on Cairns AAF. Weather watches alert post agencies of the potential for severe or hazardous weather to occur within 60 NM of Cairns AAF. The 26 OWS issues a forecast weather watch for lightning for a 15 NM radius centered on Cairns AAF. The 26 OWS also issues forecast lightning watches for a 5 NM radius centered on South Alabama RAP and Troy MAP during duty hours. The 26 OWS will cancel a watch when the potential for the condition for which it was issued no longer exists or when upgraded to a weather warning, if required.

b. Weather Warnings. The 26 OWS issues forecast weather warnings for a 15 NM radius centered on Cairns AAF. FRWXOPS issues observed weather warnings (i.e., observed lightning within 5 NM) for Cairns AAF. The 26 OWS issues forecast and observed weather warnings for a 5 NM radius centered on the South Alabama RAP and Troy MAP during duty hours. Weather warnings alert post agencies to the occurrence or imminent occurrence of severe or hazardous weather conditions requiring specific actions to ensure safety of flight, life, and/or property. Only one weather warning will be in effect for a particular site at any time. The exception is the lightning warning; while in effect, another warning may also be in effect. The 26 OWS forecaster will cancel a weather warning when the condition for which it was issued no longer exists. The FRWXOPS technician will cancel the lightning warning when lightning is no longer observed within 5 NM of Cairns AAF.

c. Weather Advisories. The 26 OWS and FRWXOPS technicians issue observed and forecast TWAs and AWAs. Weather advisories alert post agencies of weather conditions which could affect operations or post support. Forecast weather advisories are issued when the conditions within the advisory are expected to occur within the valid times of the advisory. Depending on the criteria of the forecast weather advisory, these advisories may be issued by the 26 OWS or FRWXOPS. Observed weather advisories are issued when the condition is first observed within the specified area. Observed weather advisories are issued by FRWXOPS and are valid until the condition is no longer occurring.

(1) TWAs. These advisories alert post agencies to the occurrence or forecast occurrence of weather within 15 NM of Cairns AAF that potentially affects flight operations or post support.

(2) AWAs. These advisories alert post agencies to the occurrence or forecast occurrence of weather potentially affecting flight operations within 60 NM of Cairns AAF.

d. Dissemination of Watches, Warnings, and Advisories. All watches, warnings, and advisories are disseminated to ATC agencies at Cairns AAF, Shell AHP, Lowe AHP, and Hanchey AHP via the LWNS terminals of the NTFS. This information may also be found in the LWDS on the FRWXOPS homepage. For all watches, warnings, and advisories issued or canceled by the 26 OWS, Cairns Base Operations will receive an automated telephone message from the 26 OWS to ensure receipt. For all watches, warnings, and advisories issued or canceled by FRWXOPS, followup telephone calls are made to certain customers, depending upon the criteria of the warning

or advisory. Cairns Base Operations is always notified telephonically by FRWXOPS when any watch, warning, or advisory is issued or canceled. Additionally, the IOC is always notified telephonically by FRWXOPS when any watch (except lightning) or warning is issued or canceled.

e. Backup Dissemination of Watches, Warnings, and Advisories. In the event of an NTFS outage, the 26 OWS will issue all watches, warnings, and advisories that FRWXOPS would normally issue. Additionally, FRWXOPS will locally disseminate all watches, warnings, and advisories by making phone calls to the basefields' towers, ARAC, HUB Radio, Cairns Base Operations, and IOC (watches and warnings only). The watches, warnings, and advisories may also be obtained from the MEF/DD Form 175-1 on the FRWXOPS homepage and on CCTV Channel 6.

f. Severe Weather Action Procedures (SWAP). These procedures are in place to ensure sufficient personnel are available during potential/actual severe weather events or during meteorological/operational events critical to mission success. For the purposes of these procedures, severe weather is defined as any weather phenomenon considered critical enough by the customer to require advance/special notice and subsequent actions to prevent serious injury or damage to personnel, property, or resources. It is imperative that timely and accurate weather watches, warnings, and advisories are disseminated to all Fort Rucker agencies to ensure personnel and resource protection. FRWXOPS will perform the SWAP responsibilities as defined in AFMAN 15-129; Air Force Instruction (AFI) 10-229, Responding to Severe Weather Events, 15 October 2003, and AFI 10-206, Operational Reporting, 4 October 2004.

(1) Notification. The on-duty weather technician will implement SWAP by notifying the SM (334-714-1781) or ASM (334-714-9741) when any of the following occur: a weather watch is issued for the local flying area; a tornado, ≥ 50 -knot wind, $\geq 1/2$ -inch hail, freezing precipitation, or snow warning is issued for Cairns AAF; a tornado, ≥ 50 -knot wind, $\geq 1/2$ -inch hail is issued for Troy MAP or South Alabama RAP; a hurricane or tropical storm is forecast to affect the area, or significant power/communications outages, either at the 26 OWS or FRWXOPS.

(2) Activation. The on-duty technician will coordinate with the SM or ASM to determine the level of support required. The SM or ASM will report to the weather station when it appears that severe weather is imminent and will, time permitting, conduct a control of meteorological information with the 26 OWS forecaster/Regional Weather Supervisor. The SM or ASM will remain at the weather station until the watch or warning is canceled or until it is determined that the threat has passed.

(3) Severe Weather Reporting Procedures. FRWXOPS will provide a severe weather summary OPREP IAW AFI 10-206 via e-mail to ACC; 26 OWS; IOC; Director, DPTMS, and 3DRC when any of the following occur and produce damage within the warning radii of Cairns AAF (15 NM), Troy MAP (5 NM), or South Alabama RAP (5 NM): winds ≥ 50 knots; hail $\geq 1/2$ inch; tornado; lightning, and snowstorms.

(4) Severe Weather Summary Content. The severe weather summary OPREP will include the following information: executive summary; relevant observations +/- 1 hour of the event; TAF; MEF; forecast hazards; watches, warnings, and advisories with leadtimes/timing errors; damage assessment if known; weather discussion, and status of equipment. Weather summaries are normally distributed within 24 hours of the severe event unless the event occurs over the weekend or on a holiday, in which case it is distributed the next staff duty day.

3-5. OTHER FORECAST SERVICES. FRWXOPS also provides the following forecast products and services, in addition to those previously described:

a. Hurricane Support. When a hurricane threatens the Gulf Coast or upon initial notification from the IOC, Cairns technicians begin providing post leadership with tropical updates via the FRWXOPS homepage four times daily. The content of these updates will contain the following information: storm name; date/time; current winds; current minimum pressure; current movement; when Fort Rucker will be impacted; how Fort Rucker will be impacted; onset/duration of 35-knot winds and 50-knot winds; time of maximum winds at Fort Rucker; onset of precipitation at Fort Rucker, and total rainfall expected at Fort Rucker. Note: Per Air Force policy, FRWXOPS will

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not deviate from official forecasts issued by the 26 OWS's Tropical Cyclone Threat Assessment Products (TC-TAP) and the National Hurricane Center. Graphics showing the current storm position; storm information block; the 5-day storm track, and the wind swath, as produced by Hurrevac, will also be posted, provided they do not conflict with the 26 OWS TC-TAP products. The update will be posted to the homepage at 0430L, 1030L, 1630L, and 2230L. Follow the link <http://www.rucker.army.mil/6weather/hurr.htm> to the Hurricane section and select "Hurricane Briefing Update." Additionally, FRWXOPS will provide an e-mail update to the IOC at 0430L, 1030L, 1630L, and 2230L. FRWXOPS will also provide a briefer to the IOC when the Battle Staff convenes. Finally, aircraft evacuation planning/mission forecasts will be produced as needed.

b. Electro-Optical (EO) Support. In addition to routine solar and lunar data, FRWXOPS can provide information on EO weapons system and NVG performance.

(1) Target Acquisition Weather Software (TAWS). The Air Force uses TAWS to model sensor, target, target background, and atmospheric characteristics to predict TV, infrared (IR), NVG, and laser weapon system performance under user-specified weather conditions. This information is available in either graphical or tabular output and may be produced for a point in time or for a span of time up to 24 hours in length.

(2) Requesting EO Support. Model output is based on sensor type, time on target, and flight profile, so the information for any single calculation is not widely applicable to the Fort Rucker flying community. Once a sensor number has been assigned to a profile and that sensor number is matched to a sensor name, the data will be classified SECRET. Since FRWXOPS has neither the secure internet protocol router network nor secure storage, SECRET documents will not be produced. The customer should provide **only** the sensor number when requesting TAWS data. To request data output, complete the EO worksheet (reference appendix L or the FRWXOPS Web page) and contact the FRWXOPS technician. A minimum of 24 hours notice is required for all EO requests.

c. PMSV Support. PMSV support is available 24 hours a day, 7 days a week at Cairns AAF. Frequencies are 348.8 MHz on the UHF channel and 134.1 KHz on the VHF channel. Technicians will provide requested forecast support and will solicit PIREPs from all airborne aircrews. In the event of a PMSV outage, aircrews should utilize pilot to dispatch radio on 371.35 MHz on the UHF channel and 126.2 KHz on the VHF channel. Note: AOWXOPS and TWXOPS do not provide PMSV support.

d. Aircraft Mishaps/Incidents. Weather information for aircraft mishaps (Class A or B) or incidents within 60 NM of Cairns AAF is available upon request from an authorized agency. Upon notification of an aircraft mishap, FRWXOPS will coordinate with the 26 OWS to perform a data save, and the ASM or SM will prepare a preliminary weather summary containing the observed and forecast weather in the area at the time of the accident. FRWXOPS will release a preliminary weather summary in the event of an aircraft mishap (Class A or B). These weather summaries are prepared and disseminated to the appropriate unit's Safety Office as soon as possible.

e. 7-Day Spotlight Forecast. FRWXOPS will provide a 7-day spotlight forecast every Monday, Wednesday, and Friday morning. The forecast will be posted on the FRWXOPS homepage. Please note that this product is for non-operational, planning purposes only.

f. Semiannual Weather Briefings. Briefings highlighting weather patterns and unique hazards for each season are available upon request. Requests for semiannual briefings should be made to the ASM or SM at least 3 days in advance, if possible. When FRWXOPS personnel present briefings to groups, it is the responsibility of the unit requesting the briefing to have a computer with PowerPoint and a projector available for the briefer.

g. Presidential Weather Support. Presidential weather support will be provided IAW Air Force directives.

h. Staff Weather Briefings. Weather briefings are given to the Command Group, Battle Staff, or other staffs upon request.

i. Climatological Services. Climatological studies and information are available upon request. Climatology for Cairns AAF, South Alabama RAP, and Troy MAP is provided on the FRWXOPS homepage. Requests for additional data should be made electronically to the ASM or SM with a minimum of 3 days notice. Some requests

for climatology must be submitted to the Air Force Combat Climatology Center due to their complex nature. Such requests may take longer to complete.

j. ATC Weather Training. FRWXOPS will provide initial and recurring training on limited observing procedures to all ATC personnel in order for ATC personnel to provide the required CWW. This training will be provided via CD-ROM to the 1-11th Avn Regt (reference the LOA effective 1 March 2005). FRWXOPS will train the individual Tower Chiefs as requested.

k. OWS Briefing Responsibilities. Time and mission permitting, FRWXOPS will provide weather briefings to transient aircrews. Otherwise, transient aircrews may contact their servicing OWS for their region for weather support.

l. Emergency/Crisis Action Response. FRWXOPS will provide emergency/crisis action response such as weather information and/or briefing support as requested.

3-6. FORECAST PRODUCT LIMITATIONS. The following forecast product limitations should be considered:

a. Generally, forecast accuracy decreases as the length of the forecast term increases. Additionally, if the weather station loses capabilities for a period of time (e.g., communication outage, weather station evacuation, etc.), forecast accuracy worsens as weather information becomes obsolete and no updated information is available to forecasters. Measurements of forecast performance are available on the FRWXOPS Web page.

b. Technicians cannot always provide forecasting service on a first-come-first-served basis, or they may be unable to quickly handle every request for weather service during periods of adverse weather or heavy workloads. FRWXOPS's duty priority list, provided in appendix A, ensures tasks are performed according to their importance.

CHAPTER 4

RECIPROCAL SUPPORT AND RESPONSIBILITIES

4-1. **FRWXOPS ROLES AND RESPONSIBILITIES.** FRWXOPS accomplishes the following tasks:

- a. Provide the weather forecasting and observing services described in chapters 2 and 3 and appropriate appendixes of this regulation.
- b. Report OPREP-3 reportable events to the IOC and ACC.
- c. Provide peacetime weather support to Army Reserve components assigned to Fort Rucker, using products and procedures described in this regulation.
- d. Notify Cairns Base Operations of all PMSV outages and returns to service. Since FRWXOPS does not have the ability to conduct a daily radio check, FRWXOPS will use the first PMSV contact of the day as a radio check and will so document.
- e. Provide ATC weather support.
 - (1) FRWXOPS will provide initial and recurring training on limited observing procedures to ATC personnel. The weather station will provide this training via CD-ROM to the 1-11th Avn Regt (reference the LOA effective 1 March 2005). FRWXOPS will train the individual Tower Chiefs as requested.
 - (2) Establish a CWW with 1-11th Avn Regt personnel.
- f. Upon request, provide assistance to investigating officials reviewing Fort Rucker aircraft mishaps.
- g. Notify the Garrison Commander, through the Director, DPTMS, of any limitations in providing weather support, and provide information to DPTMS in order to update the notices to airmen (NOTAMs) and DOD flight information publications (FLIP) accordingly.
- h. Release weather information to DOD agencies upon request (reference paragraph 1-5).
- i. Coordinate with the 26 OWS on all issues related to weather support to Fort Rucker provided by the 26 OWS.
- j. Coordinate with the IOC to conduct a monthly tornado siren test.
- k. Operate the tornado siren.

4-2. **FORT RUCKER ACTIVITY REQUIREMENTS.** FRWXOPS requires support from various units assigned to Fort Rucker.

- a. DPTMS will—
 - (1) Inform the SM or ASM, in writing, of any weather support requirement changes.
 - (2) Provide the SM or ASM access to all plans that require or impact weather support.
 - (3) Disseminate weather watches, warnings, and advisories through the IOC IAW the 2006 Fort Rucker Mobilization and Operational Planning System (RMOPS) Weather Plan.
 - (4) Notify the SM or ASM if an alert or contingency requires weather support.

- (5) Notify the SM or ASM at least 7 days in advance if an exercise requires weather support.
- (6) Promptly report significant events that involve FRWXOPS resources, personnel, or services, or reports of damage caused by a weather event.
 - (a) Coordinate with the SM or ASM prior to submitting a report concerning such events.
 - (b) Include ACC LANGLEY AFB VA in message reports, with information copies to A3W LANGLEY AFB VA//DIW// and 3D RESEARCH CORPORATION//SCIENTIFIC SERVICES DIVISION.
 - (c) Provide an information copy of the OPREP-3.
- (7) Relay EMERGENCY ACTION MESSAGES which affect the post to FRWXOPS.
- (8) Notify FRWXOPS of all force protection condition changes.
- (9) Budget funds for logistical support of FRWXOPS.
- (10) Submit changes in weather operations (e.g., PMSV frequencies, operating hours) to DOD FLIP and NOTAMs.
- (11) Provide administrative support.
- (12) Coordinate with FRWXOPS to conduct a monthly tornado siren test.
- b. The 1-11th Avn Regt will—
 - (1) Conduct a CWW at all ATC facilities. Notify the weather station when the following occur:
 - (a) Winds $\geq 25, 35$, or 50 knots occur at any basefield or stagefield with wind measurement capability.
 - (b) There are significant weather phenomena, such as fog or thunderstorms that may affect flight operations.
 - (c) Cairns Tower will notify the weather station when tower visibility is < 4 SM, and is different from the visibility reported on the current Cairns observation (i.e., the surface visibility).
 - (d) Hanchey and Lowe Towers will notify the weather station when their ceiling is ≤ 1000 feet and/or visibility ≤ 3 SM and is different from the observation at Cairns.
 - (e) Hanchey and Lowe Towers will notify the weather station if a cloud ceiling forms below, decreases to less than, or, if below, increases to equal or exceed 500 feet. Additionally, notify the weather station when visibility decreases to less than or, if below, increases to equal or exceed $1/2$ SM.
 - (f) Relay all PIREPs received to weather personnel as quickly as possible. It is very important to relay local PIREPs and any occurrence of previously unreported weather conditions that could affect flight safety or be critical to the safety and efficiency of other local operations and resources.
 - (2) Disseminate weather watches, warnings, advisories, and any other significant information IAW the 2006 RMOPS Weather Plan.
 - (3) Maintain the PMSV radio and monitor the radio during short-duration outages. Provide a radio check upon request.

(4) Tell the weather station which runway is active, both upon opening the airfield and changing runways. Notify the weather station of the current runway light setting upon opening, closing, or changing the light setting.

(5) Provide orientation tours of ARAC and ATC operations to newly assigned weather personnel upon request.

(6) Notify the weather station of meteorological equipment outages, communications outages, and aircraft mishaps. Provide the weather station a copy of the Fort Rucker Form 595-E (Initial Mishap Report) upon request or when a Class A or B accident occurs.

(7) ARAC/HUB will relay PIREPs, weather watches, warnings, and advisories, and weather reports to and from all basefields, stagefields, and airborne aircraft.

(8) HUB Radio will relay all MEF amendments to all active stagefields (including Molinelli Tower) and airborne crews.

(9) Provide backup radar support upon request.

c. 110th Aviation Brigade (110 AB) or Safety personnel will notify the SM or ASM, in writing, of—

(1) Additional briefing or weather services needed due to changing aircraft or training requirements.

(2) Weekend flight training activities by 1600L Thursday.

d. Army Reserve components will notify FRWXOPS when—

(1) Weather or weather service may be a factor in a Class A mishap being investigated.

(2) Flying is planned for the weekend.

e. The 1st Battalion, 223d Aviation Regiment will relay all MEF amendments to Cairns Tower, Lowe/Hanchey/Knox/Shell/USAATTC/FLATIRON Operations, and HUB Radio.

f. FRWXOPS personnel require support from various agencies at Fort Rucker to complete official duties and provide for unit members' quality of life. All requirements concerning Fort Rucker responsibilities regarding training, operations, communications, administration, budget, and logistics are outlined in AR 115-10. Units providing support services to FRWXOPS include, but are not limited to:

(1) The Directorate of Information Management (DOIM) will provide telephone/communication lines, communications/administrative support, and computer network services (LAN access, e-mail accounts). DOIM will provide commercial, long distance, and DSN telephone access. DOIM technicians will repair FRWXOPS network capability 24 hours per day, 7 days per week, at a priority just below that given to airfield navigational aids (NAVAIDs) and the IOC's communications capabilities.

(2) The Directorate of Logistics will provide government vehicles and refuel generators.

(3) The Directorate of Public Works (DPW) will provide and maintain FRWXOPS facilities (at Cairns AAF and Troy MAP) and restore/maintain backup generators at high priority.

(4) NAVAIDs will maintain/repair the PMSV radio and will restore/maintain the CCTV capability of FRWXOPS.

g. Each Fort Rucker agency and tenant unit will—

(1) Provide FRWXOPS feedback on its forecasting, observing, and training products and services.

(a) Aviation customers will debrief IAW locally established policies and procedures. Weather information from the debriefing will be routed to the weather station through local communication channels (e-mail or fax).

(b) All non-aviation customers should use a Fort Rucker Form 331 (6th Weather Flight/3DRC Customer Satisfaction Survey) to tell the FRWXOPS how satisfied they are with various products and services. This form may be found on the FRWXOPS homepage.

(c) Customers may also utilize the Interactive Customer Evaluation system to provide feedback on weather products and services.

(2) Review weather support requirements at least annually. Notify FRWXOPS through DPTMS when changes are required.

(3) Notify NAVAIDs maintenance whenever a weather CCTV outage occurs.

(4) Notify DOIM whenever an LAN outage occurs.

(5) All aviators will pass significant flight weather information to FRWXOPS via HUB, PMSV, ATC, Base Operations, or telephone.

(6) Notify FRWXOPS when weekend flying is planned.

The proponent agency of this regulation is the Directorate of Plans, Training, Mobilization, and Security. Users are invited to send comments and suggested improvements to the US Army Garrison Command, ATTN: IMSE-RCK-PLA, Fort Rucker, AL 36362-5105.

FOR THE GARRISON COMMANDER:



THOMAS L. BARRETT
Director of Information Management

Appendixes
A-N

APPENDIX A

WEATHER STATION DUTY PRIORITIES

FRWXOPS provides weather support on a priority basis to ensure tasks are performed in the order of their importance. Tasks are accomplished with the following priority:

1. Operate tornado siren.
2. Execute weather station evacuation.
3. Respond to aircraft and ground emergencies (e.g., aircraft emergencies and mishaps, accidental release of toxic chemicals, or any operation involving the safety of aircraft, materiel, or personnel).
4. Respond to PMSV contacts.
5. Respond to telephone HOTLINES (FLATIRON medical evacuation (MEDEVAC) missions, ARAC, Cairns, Hanchey, Lowe, HUB, IOC).
6. Take and disseminate Cairns AAF surface observations.
7. Provide “eyes forward”/collaborate with 26 OWS.
8. Disseminate weather watches, warnings, and advisories.
9. Perform SWAP duties.
10. Relay urgent PIREPs and air reports (AIREPs) to 26 OWS.
11. Prepare and transmit MEFs.
12. Disseminate PIREPs and AIREPs.
13. Perform MISSIONWATCH activities.
14. Respond to other telephones (non-HOTLINES).
15. Provide flight weather briefings to local aircraft departing Cairns AAF.
16. Provide assistance to transient aircraft departing Cairns AAF.
17. Provide weather function training.
18. Provide other briefing support.
19. Accomplish administrative tasks.

APPENDIX B

SPECI CRITERIA (CAIRNS AAF)

1. Ceilings: The ceiling is observed to form below, decrease to less than, or, if below, increase to equal or exceed:

3,000 feet (AFMAN 15-111 and Fort Rucker Reg 115-1, US Army Aviation Center of Excellence (USAACE) Weather Support, 23 September 2008)

1,500 feet (AFMAN 15-111 and Fort Rucker Reg 115-1)

1,000 feet (AFMAN 15-111 and Fort Rucker Reg 115-1)

800 feet (AFMAN 15-111)

700 feet (AFMAN 15-111 and Fort Rucker Reg 115-1)

600 feet (DOD FLIP and Fort Rucker Reg 115-1)

500 feet (AFMAN 15-111, DOD FLIP, and Fort Rucker Reg 115-1)

400 feet (DOD FLIP and Fort Rucker Reg 115-1)

300 feet (DOD FLIP and Fort Rucker Reg 115-1)

200 feet (AFI 13-203, Air Traffic Control, 30 November 2005; DOD FLIP, and FRR 115-1)

100 feet (LOCAL: MEDEVAC launch minimum)

2. Sky Condition: A layer of clouds or obscuring phenomena aloft is observed 600 feet or below and no layer was reported in a previous hourly observation (SA) or special observation (SP) (AFMAN 15-111 and Fort Rucker Reg 115-1).

3. Prevailing visibility is observed to decrease to less than or, if below, increase to equal or exceed:

3 SM (AFMAN 15-111 and Fort Rucker Reg 115-1)

2 SM (AFMAN 15-111, AFI 13-203, DOD FLIP, and Fort Rucker Reg 115-1)

1 1/2 SM (DOD FLIP and Fort Rucker Reg 115-1)

1 1/4 SM (DOD FLIP and Fort Rucker Reg 115-1)

1 SM (AFMAN 15-111, DOD FLIP, and Fort Rucker Reg 115-1)

3/4 SM (DOD FLIP and Fort Rucker Reg 115-1)

1/2 SM (AFI 13-203, DOD FLIP, and Fort Rucker Reg 115-1)

1/4 SM (LOCAL: MEDEVAC launch minimum and AR 95-1, Flight Regulations, 3 February 2006)

4. Tornado or Funnel Cloud: Is observed or disappears from sight (AFMAN 15-111 and Fort Rucker Reg 115-1).

5. Precipitation or hail begins or ends (AFMAN 15-111 and Fort Rucker Reg 115-1).

6. Freezing precipitation begins, ends, or changes intensity (AFMAN 15-111 and Fort Rucker Reg 115-1).

7. Thunderstorms begin or end (AFMAN 15-111 and Fort Rucker Reg 115-1).

8. Squall (speed increases 16 knots and is \geq 22 knots for at least 1 minute) (AFMAN 15-111 and Fort Rucker Reg 115-1).

9. Wind Shift: When the direction changes by 45 degrees or more in less than 15 minutes with sustained winds (or gusts) of 10 knots or more throughout the shift (AFMAN 15-111 and Fort Rucker Reg 115-1).

10. RVR decreases to less than or, if below, increases to equal or exceed:

2,000 feet (AFMAN 15-111 and Fort Rucker Reg 115-1)

2,400 feet (FLIP, AFMAN 15-111, and Fort Rucker Reg 115-1)

4,000 feet (FLIP and Fort Rucker Reg 115-1)

Fort Rucker Reg 115-1 • 23 September 2008

5,000 feet (AFMAN 15-111, DOD FLIP, and Fort Rucker Reg 115-1)
6,000 feet (AFMAN 15-111, DOD FLIP, and Fort Rucker Reg 115-1)

RVR conditions (Runway 06 only) are unavailable (RVRNO), are first determined, or when RVRNO is no longer applicable.

Prevailing visibility is first observed to be ≤ 1 SM and again when prevailing visibility goes above 1 SM.

Note: RVR is only reported long line for Runway 06, when active. Locally, RVR is reported for Runway 06 regardless of the active runway.

APPENDIX C

SPECI CRITERIA (SOUTH ALABAMA RAP)

1. Ceilings: The ceiling is observed to form below, decrease to less than, or, if below, increase to equal or exceed:
 - 3,000 feet (AFMAN 15-111 and Fort Rucker Reg 115-1)
 - 1,500 feet (AFMAN 15-111 and Fort Rucker Reg 115-1)
 - 1,000 feet (AFMAN 15-111 and Fort Rucker Reg 115-1)
 - 700 feet (AFMAN 15-111 and Fort Rucker Reg 115-1)
 - 600 feet (DOD FLIP and Fort Rucker Reg 115-1)
 - 500 feet (AFMAN 15-111, DOD FLIP, and Fort Rucker Reg 115-1)
 - 400 feet (DOD FLIP and Fort Rucker Reg 115-1)
2. Sky Condition: A layer of clouds or obscuring phenomena aloft is observed 600 feet or below and no layer was reported in a previous SA or SP (AFMAN 15-111, DOD FLIP, and Fort Rucker Reg 115-1).
3. Prevailing visibility is observed to decrease to less than or, if below, increase to equal or exceed:
 - 3 SM (AFMAN 15-111 and Fort Rucker Reg 115-1)
 - 2 SM (AFMAN 15-111, AFI 13-203, DOD FLIP, and Fort Rucker Reg 115-1)
 - 1 1/2 SM (DOD FLIP and Fort Rucker Reg 115-1)
 - 1 1/4 SM (DOD FLIP and Fort Rucker Reg 115-1)
 - 1 SM (AFMAN 15-111, DOD FLIP, and Fort Rucker Reg 115-1)
 - 1/2 SM (AFI 13-203, DOD FLIP, Fort Rucker Reg 115-1, and AR 95-1)
4. Tornado or Funnel Cloud: Is observed or disappears from sight (AFMAN 15-111 and Fort Rucker Reg 115-1).
5. Precipitation or hail begins or ends (AFMAN 15-111 and Fort Rucker Reg 115-1).
6. Freezing precipitation begins, ends, or changes intensity (AFMAN 15-111 and Fort Rucker Reg 115-1).
7. Thunderstorms begin or end (AFMAN 15-111 and Fort Rucker Reg 115-1).
8. Squall (speed increases 16 knots and is \geq 22 knots for at least 1 minute) (AFMAN 15-111 and Fort Rucker Reg 115-1).
9. Wind Shift: When the direction changes by 45 degrees or more in less than 15 minutes with sustained winds (or gusts) of 10 knots or more throughout the shift (AFMAN 15-111 and Fort Rucker Reg 115-1).

APPENDIX D

SPECI CRITERIA (TROY MAP)

1. Ceiling: The ceiling is observed to form below, decrease to less than, or, if below, increase to equal or exceed:

3,000 feet (AFMAN 15-111 and Fort Rucker Reg 115-1)
1,500 feet (AFMAN 15-111 and Fort Rucker Reg 115-1)
1,000 feet (AFMAN 15-111 and Fort Rucker Reg 115-1)
800 feet (AFMAN 15-111 and Fort Rucker Reg 115-1)
700 feet (AFMAN 15-111 and Fort Rucker Reg 115-1)
600 feet (DOD FLIP and Fort Rucker Reg 115-1)
500 feet (AFMAN 15-111, DOD FLIP, and Fort Rucker Reg 115-1)
400 feet (DOD FLIP and Fort Rucker Reg 115-1)
300 feet (DOD FLIP and Fort Rucker Reg 115-1)
2. Sky Condition: A layer of clouds or obscuring phenomena aloft is observed 800 feet or below and no layer was reported in a previous METAR or SPECI (AFMAN 15-111, DOD FLIP, and Fort Rucker Reg 115-1).
3. Prevailing visibility is observed to decrease to less than or, if below, increase to equal or exceed:

3 SM (AFMAN 15-111 and Fort Rucker Reg 115-1)
2 1/4 SM (DOD FLIP and Fort Rucker Reg 115-1)
2 SM (AFMAN 15-111, DOD FLIP, and Fort Rucker Reg 115-1)
1 3/4 SM (DOD FLIP and Fort Rucker Reg 115-1)
1 1/2 SM (DOD FLIP and Fort Rucker Reg 115-1)
1 1/4 SM (DOD FLIP and Fort Rucker Reg 115-1)
1 SM (AFMAN 15-111, DOD FLIP, and Fort Rucker Reg 115-1)
3/4 SM (DOD FLIP and Fort Rucker Reg 115-1)
3/8 SM (DOD FLIP and AR 95-1)
4. Tornado or Funnel Cloud: Is observed or disappears from sight (AFMAN 15-111 and Fort Rucker Reg 115-1).
5. Precipitation or hail begins or ends (AFMAN 15-111 and Fort Rucker Reg 115-1).
6. Freezing precipitation or ice pellets begin, end, or change intensity (AFMAN 15-111 and Fort Rucker Reg 115-1).
7. Thunderstorms begin or end (AFMAN 15-111 and Fort Rucker Reg 115-1).
8. Squall (speed increases 16 knots and is \geq 22 knots for at least 1 minute) (AFMAN 15-111 and Fort Rucker Reg 115-1).
9. Wind Shift: When the direction changes by 45 degrees or more in less than 15 minutes with sustained winds (or gusts) of 10 knots or more throughout the shift (AFMAN 15-111 and Fort Rucker Reg 115-1).

APPENDIX E

FMQ-19/ASOS AUGMENTATION/BACKUP PARAMETERS

1. On 13 June 2007, the FMQ-19 automated observing system was commissioned, thereby transitioning Cairns AAF from a manual reporting station to an automated reporting station. IAW Air Force directives, the FMQ-19 must remain in AUTO mode at all times unless the technician is performing augmentation or backup for criteria listed in AFMAN 15-111. The ASOSs at Troy MAP and South Alabama RAP are also augmented/backed-up as required and applicable. Augmentation consists of supplementing and/or backing up. Supplementing is the process of manually adding data to an observation generated by an automated surface weather observing system that is beyond that system's capability to measure and report. Backup is the process of providing meteorological data, documentation, and/or communication of an automated weather observation when the primary automated method is unavailable or unrepresentative. All backed-up elements will be observed from the weather station's backup observation point. The technician is responsible for ensuring the validity of all supplemented or backed-up data.
2. The following elements will be supplemented (AFMAN 15-111):
 - a. Tornado, funnel cloud, or waterspout.
 - b. Volcanic ash.
 - c. Hail size ($\geq 1/2$ inch).
 - d. Visibility $< 1/4$ SM.
 - e. Duststorm or sandstorm.
3. The following is a list of the most commonly used mandatory parameters of FMQ-19/ASOS which will be backed up and the equipment used for backup:
 - a. Windspeed and direction (Kestrel 4000).
 - b. Visibility (technician and visibility chart).
 - c. Present weather elements and obscurations (technician).
 - d. Sky cover, up to and including 12,000 feet (technician).
 - e. Temperature/dewpoint (Kestrel 4000).
 - f. Altimeter setting (Kestrel 4000).
 - g. Lightning location (JAAWIN applet, technician).
 - h. Layer of clouds or obscuring phenomenon aloft observed at or below 600 feet SPECI (technician).
 - i. Other remarks.
 - j. Additive data.

APPENDIX F

WEATHER WATCH/WARNING/ADVISORY CRITERIA

- Forecast Weather Watch Criteria (issued by the 26 OWS with FRWXOPS as a backup).

Table F.1 - Forecast Weather Watches	
Criteria	Desired Leadtime
Tornado	As potential warrants
Damaging Winds \geq 50 knots	As potential warrants
Hail \geq 1/2 inch	As potential warrants
Heavy Rain (\geq 2 inches in 12 hours)	As potential warrants
Snowfall \geq 1/2 inch accumulation	As potential warrants
Freezing Precipitation	As potential warrants
Lightning within 15 NM	60 minutes

Note: Except as noted, weather watches are issued for a 60 NM radius around Cairns AAF.

- KTOI and K79J Forecast Weather Watch Criteria (issued by the 26 OWS with FRWXOPS as a backup).

Table F.2 - Forecast Weather Watch Criteria and Desired Leadtimes (KTOI, K79J)	
Criteria	Desired Leadtime
Lightning within 5 NM	30 minutes

- Forecast Weather Warning Criteria (issued by the 26 OWS with FRWXOPS as a backup).

Table F.3 - Forecast Weather Warning Criteria and Associated Minimum Desired Leadtimes	
Criteria	Desired Leadtime
Tornado	5 minutes
Damaging Winds \geq 50 knots	60 minutes
Winds 35-49 knots	60 minutes
Winds 30-34 knots	60 minutes
Hail \geq 1/2 inch diameter	60 minutes
Hail $<$ 1/2 inch diameter	60 minutes
Heavy Rain \geq 2 inches in 12 hours	60 minutes
Snowfall \geq 1/2 inch accumulation	60 minutes
Freezing Precipitation	60 minutes

Note: Forecast warnings are issued for a 15 NM radius around Cairns AAF.

- KTOI and K79J Forecast Weather Warning Criteria (issued by the 26 OWS with FRWXOPS as a backup).

Table F.4 - Forecast Weather Warning Criteria and Desired Leadtimes (KTOI, K79J)	
Criteria	Desired Leadtime
Tornado	5 minutes
Damaging Winds \geq 50 Knots	60 minutes
Hail \geq 1/2 inch diameter	60 minutes

Note: Forecast warnings are issued for a 5 NM radius around South Alabama RAP and Troy MAP and are issued during duty hours only.

5. Observed Weather Warning Criteria (issued by FRWXOPS with the 26 OWS as a backup).

Table F.5 - Observed Weather Warning Criteria and Desired Leadtimes	
Criteria	Desired Leadtime
Lightning within 5 NM	Observed

Note: Observed warnings are issued for a 5 NM radius around Cairns AAF.

6. KTOI and K79J Observed Weather Warning Criteria (issued by the 26 OWS with FRWXOPS as a backup).

Table F.6 - Observed Weather Warning Criteria and Desired Leadtimes	
Criteria	Desired Leadtime
Lightning within 5 NM	Observed

Note: Observed warnings are issued for a 5 NM radius around South Alabama RAP and Troy MAP and are issued during duty hours only.

7. Forecast AWA Criteria (issued by FRWXOPS with the 26 OWS as a backup).

Table F.7 - Forecast AWA Criteria and Desired Leadtimes	
Criteria	Desired Leadtime
Forecast IFR conditions (< 1000/3) within 60 NM during the N1 flying period	60 minutes
Forecast IFR conditions associated with thunderstorms within 60 NM during the N1 flying period	60 minutes
Forecast severe or extreme TURBC within 60 NM (below 10,000 feet)	60 minutes
Forecast icing (any type/amount) within 60 NM (below 10,000 feet)	60 minutes

Note: Forecast AWAs are issued for a 60 NM radius around Cairns AAF.

8. Observed AWA Criteria (issued by FRWXOPS with the 26 OWS as a backup).

Table F.8 - Observed AWA Criteria and Desired Leadtimes	
Criteria	Desired Leadtime
Winds ≥ 20 knots observed within 60 NM	Observed
Moderate or greater TURBC observed within 60 NM (below 10,000 feet)	Observed
LLWS observed within 60 NM (below 2,000 feet)	Observed
IFR conditions (< 1000/3) observed within 60 NM during the N1 flying period	Observed
Cig/Vis $\leq 1500/5$ observed in Goldfish during the N1 flying period	Observed

Note: Observed AWAs are issued for a 60 NM radius around Cairns AAF.

9. Forecast TWA Criteria (issued by the 26 OWS with FRWOPS as a backup).

Table F.9 - Forecast TWA Criteria and Desired Leadtimes	
Criteria	Desired Leadtime
Temperature $\leq 0^{\circ}\text{C}$ for ≥ 5 hours	60 Minutes
Temperature $\leq -6^{\circ}\text{C}$	60 Minutes

Note: Forecast TWAs are issued for a 15 NM radius around Cairns AAF.

10. Forecast TWA Criteria (issued by FRWXOPS with the 26 OWS as a backup).

Table F.10 - Forecast TWA Criteria and Desired Leadtimes	
Criteria	Desired Leadtime
Forecast IFR conditions (< 1000/3) within 15 NM during the N1 flying period	60 Minutes
Forecast IFR conditions associated with thunderstorms within 15 NM during the N1 flying period	60 Minutes

Note: Forecast TWAs are issued for a 15 NM radius around Cairns AAF.

11. Observed TWA Criteria (issued by FRWXOPS with the 26 OWS as a backup).

Table F.11 - Observed TWA Criteria and Desired Leadtimes	
Criteria	Desired Leadtime
Gust Spread \geq 15 knots	Observed
Lightning observed within 10 NM	Observed
\geq 25-knot crosswind	Observed
IFR conditions (< 1000/3) observed within 15 NM during the N1 flying period	Observed

Note: Unless otherwise noted, observed TWAs are issued for a 15 NM radius around Cairns AAF.

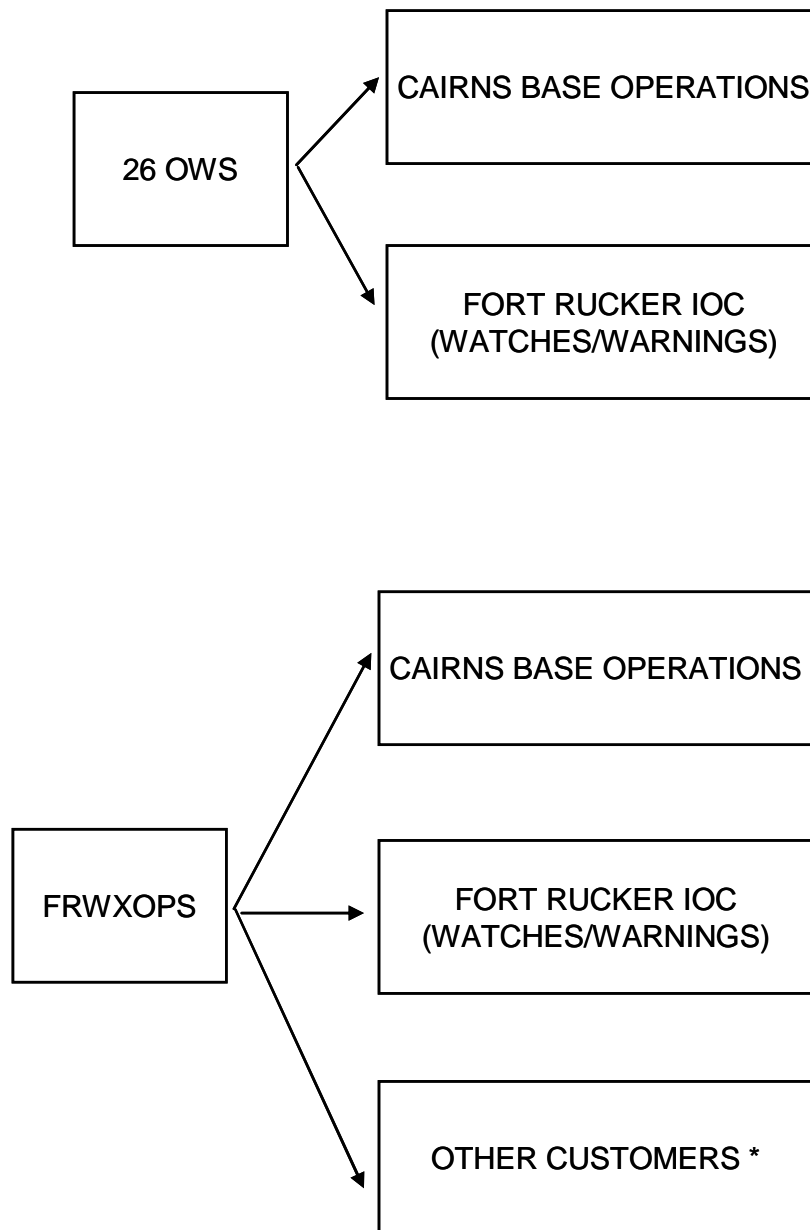
12. Weather Watch, Warning, and Advisory Dissemination. All weather watches, warnings, and advisories will be disseminated via the NTFS, posted to the FRWXOPS homepage, and displayed on CCTV. For all watches, warnings, and advisories issued or canceled by the 26 OWS, an automated telephone call will be placed to Cairns Base Operations. FRWXOPS will also place a courtesy call to Cairns Base Operations to ensure receipt. For watches, warnings, and advisories issued or canceled by FRWXOPS, additional telephone notifications will be made to certain customers (Cairns Refuel, DPW, etc.) in addition to Cairns Base Operations. For all watches (except lightning) and warnings, the IOC will be notified telephonically upon issuing or canceling.

13. Backup Dissemination of Watches, Warnings, and Advisories. In the event of an NTFS outage, the 26 OWS will issue all watches, warnings, and advisories that FRWXOPS would normally issue. Additionally, FRWXOPS will locally disseminate all watches, warnings, and advisories by making phone calls to the basefields' towers, ARAC, HUB Radio, Cairns Base Operations, and IOC (watches and warnings only). The watches, warnings, and advisories may also be obtained from the MEF/DD Form 175-1 on the FRWXOPS homepage and on CCTV Channel 6.

14. Weather watches, warnings, and advisories are each numbered sequentially by month. For instance, the first weather watch in August would be #08-001, the third weather warning in November would be #11-003, and the tenth weather advisory in December would be #12-010.

FIGURE 1

RESOURCE PROTECTION NOTIFICATION CHAIN



*For freezing precipitation, snow, heavy rain, and temperature watches/warnings/advisories, Energy Monitoring and Control Systems/DPW will be notified. For lightning within 10 NM and 5 NM, Refuel will be notified. For the N1 advisories, ARAC and HUB Radio will be notified. For the N1 Goldfish advisory, ARAC will be notified.

Generally speaking, Cairns Base Operations disseminates watches, warnings, and advisories through operational channels via the weather phone. The IOC disseminates watches and warnings through administrative channels. For details of how Cairns Base Operations and the IOC disseminate watches, warnings, and advisories, refer to the Fort Rucker RMOPS Weather Plan.

APPENDIX G

BREAKDOWN OF THE LOCAL DD FORM 175-1 (FLIGHT WEATHER BRIEFING)

1. Takeoff Data.

PM		FLIGHT WEATHER BRIEFING						CORRECTED AT: 18:20		PM	
AMENDED		PART I - TAKEOFF DATA						UPDATED at 1815Z			
1. DATE (FTHHDD) 070511	2. ACFT TYPE / NO.	3. DEP PT / ETD z	4. RUNWAY TEMP 30 °C	5. DEWPOINT 22 °C	6. TEMP DEW °C	7. PRESSURE ALT 340 FT	8. DENSITY ALT FT	9. SFC WIND	10. CLIMB WINDS	11. LOCAL WEATHER WARNING / ADVISORY SEE REMARKS	12. RCR
13. REMARKS / TAKEOFF ALTN FCST WATCH #05-004 COND FAVORABLE FOR SEVERE TS W/ 60NM OF CAAF AWA #05-023 SFC WINDS 20KTS OR GTR OBSVD W/ 60NM OF CAAF YT: YT: 1700Z - 0000Z CURR - UFN											

Block Number

- 1 - Date of mission (Zulu).
- 2-3 - Typically not included on the IFR DD Form 175-1; available upon request.
- 4 - Runway temperature for specific flight period times (AM - 0800L, PM - 1400L, N1 - 2000L).
- 5 - Dewpoint temperature for specific flight period times (AM - 0800L, PM - 1400L, N1 - 2000L).
- 6 - Typically not included on the IFR DD Form 175-1; available upon request.
- 7 - PA for specific flight period times (AM - 0800L, PM - 1400L, N1 - 2000L).
- 8-10 - Typically not included on the IFR DD Form 175-1; available upon request.
- 11 - Any watch, warning, or advisory (terminal or area) in effect at takeoff. If none are valid for the flight period, NONE is entered in this block.
- 12 - Runway condition reading (RCR) is available from Base Operations and/or tower personnel.
- 13 - Any watch, warning, or advisory (terminal or area) in effect will appear here. Exception: Lightning observed within 10 NM and 5 NM. If there are more than two watches, warnings, or advisories in effect, they will appear in the Remarks section.

2. Enroute & Mission Data.

PART II - ENROUTE & MISSION DATA																																																																																											
14. FLT LEVEL/WIND/TEMP						15. SPACE WEATHER				16. SOLAR/ LUNAR																																																																																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>010 30010KT / +28 C</td> <td>050 33025KT / +18 C</td> </tr> <tr> <td>020 33025KT / +26 C</td> <td>060 34040KT / +16 C</td> </tr> <tr> <td>030 31025KT / +24 C</td> <td>070 34040KT / +13 C</td> </tr> <tr> <td>040 33025KT / +21 C</td> <td>080 34040KT / +09 C</td> </tr> </table>						010 30010KT / +28 C	050 33025KT / +18 C	020 33025KT / +26 C	060 34040KT / +16 C	030 31025KT / +24 C	070 34040KT / +13 C	040 33025KT / +21 C	080 34040KT / +09 C	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>NO IMPACT</td> <td>MARGINAL</td> <td>SEVERE</td> </tr> <tr> <td>FREQ</td> <td>X</td> <td></td> </tr> <tr> <td>GPS</td> <td></td> <td>X</td> </tr> <tr> <td>RAD</td> <td>X</td> <td></td> </tr> </table>				NO IMPACT	MARGINAL	SEVERE	FREQ	X		GPS		X	RAD	X		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>BMNT 12/ 0451</td> <td></td> </tr> <tr> <td>SR 12/ 0549</td> <td>HR 12/ 0253</td> </tr> <tr> <td>SS 11/ 1929</td> <td>MS 11/ 1358</td> </tr> <tr> <td>EENT 11/ 2027</td> <td>ILLUM 28 %</td> </tr> </table>		BMNT 12/ 0451		SR 12/ 0549	HR 12/ 0253	SS 11/ 1929	MS 11/ 1358	EENT 11/ 2027	ILLUM 28 %																																																				
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EENT 11/ 2027	ILLUM 28 %																																																																																										
17. CLOUDS AT FLT LEVEL <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> IN AND OUT						18. OBSCURATIONS AT FLT LEVEL RESTRICTING VISIBILITY <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO TYPE FOG PRECIPITATION																																																																																					
19. MINIMUM CEILING - LOCATION ISOLD ALL AREAS 025 FT AGL						20. MAXIMUM CLOUD TOPS - LOCATION FT MSL				21. MINIMUM FREEZING LVL - LOCATION ALL AREAS >100 FT MSL																																																																																	
22. THUNDERSTORMS			23. TURBULENCE*			24. ICING			25. PRECIPITATION																																																																																		
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Block
Number

- 14 - Flight level, winds, and temperatures (degrees Celsius). For USAACE operations, flight levels typically range 010-080 feet, and these will be listed in this block.
- 15 - Space weather.
- 16 - Solar/Lunar data. Sunrise (SR), sunset (SS), begin morning nautical twilight (BMNT), end evening nautical twilight (EENT), moonrise (MR), moonset (MS), and percent illumination (ILLUM) are included in this block.
- 17 - Clouds at flight level. Typically not included on the IFR DD Form 175-1; available upon request.
- 18 - Obscurations at flight level restricting visibility in the local flying area. If flight visibility is < 7 SM, an obstruction will be indicated.
- 19 - Minimum ceiling (AGL) in the local flying area.
- 20 - Maximum cloud tops (MSL) en route. Typically not included on the IFR DD Form 175-1; available upon request.
- 21 - Minimum freezing level (MSL) in the local flying area.
- 22 - Thunderstorms. Includes the type, coverage, maximum tops, and location.
- 23 - Turbulence. Includes the type, intensity, levels, and location.
- 24 - Icing. Includes the type, amount, levels, and location.
- 25 - Precipitation. Includes the type, intensity, and location.

3. Aerodrome Forecasts.

PART III - AERODROME FORECASTS							
26. AIRDROME	27. VALID TIME	28. SFC WIND	29. VSBT/WEA	30. CLOUD LAYERS	31. ALTIMETER	RWT TEMP	PRES ALT
DEST / ALTH KOZR	1700 ^{Z TO} 2200 ^Z	26012G20M	7	SCT030 BKN100 BKN200	29.88 ^{INS}	^{aFPG}	^{FT}
DEST / ALTH TEMPO	1900 ^{Z TO} 2100 ^Z	VRB22G38M	1 +TSRA BR	SCT015 BKN025 OVC040	^{INS}	^{aFPG}	^{FT}
DEST / ALTH FROM	2200 ^{Z TO} 0000 ^Z	32012G20M	7	SCT040 SCT100 BKN250	29.90 ^{INS}	^{aFPG}	^{FT}
DEST / ALTH KMGM	1700 ^{Z TO} 2100 ^Z	28015G20	7	SCT030 BKN100 BKN200	29.87 ^{INS}	^{aFPG}	^{FT}
DEST / ALTH TEMPO	1800 ^{Z TO} 2000 ^Z	VRB25G40	1 +TSRA BR	SCT015 BKN025 OVC040	^{INS}	^{aFPG}	^{FT}
DEST / ALTH FROM	2100 ^{Z TO} 0000 ^Z	33012G20	7	FEW030 SCT100 BKN250	29.91 ^{INS}	^{aFPG}	^{FT}
DEST / ALTH KABY	1700 ^{Z TO} 0000 ^Z	25012G18	7	SCT030 BKN100 BKN250	29.89 ^{INS}	^{aFPG}	^{FT}
DEST / ALTH TEMPO	2100 ^{Z TO} 2300 ^Z	VRB20G35	1 +TSRA BR	SCT015 BKN025 OVC045	^{INS}	^{aFPG}	^{FT}

Block
Number

- 26 - Destination or alternate destination for the mission. IFR DD Form 175-1 primary destinations are Cairns AAF (KOZR), Dothan (KDHN), Marianna (KMAI), Montgomery (KMGM), South Alabama Regional (K79J), Bonifay (K1J0), Troy (KTOI), Lawson AAF (KLSF), Albany (KABY), Columbus (KCSG), Tallahassee (KTLH), Panama City (KPFN), Eufaula (KEUF), Crestview (KCEW), and Pensacola (KPNS).
- 27 - Valid time. On the IFR DD Form 175-1, the valid time begins at briefing time plus 1 hour and ends when significant changes occur which require additional lines to the forecasts. The end of the forecast period is the end of the scheduled flying period.
- 28 - Forecast surface wind in DDDSSGSS. DDD indicates direction from which wind is forecast to be blowing; SS indicates windspeed in knots; G indicates gusts, if any, and SS indicates maximum forecast wind gust in knots. For round robin flights, winds will be magnetic. For destinations other than Cairns AAF, winds will be true.
- 29 - Forecast visibility and any weather or obstructions which limit visibility to < 7 SM.
- 30 - Forecast cloud layers in METAR code.
- 31 - Forecast minimum ALSTG.

4. Comments/Remarks.

PART IV - COMMENTS/REMARKS									
32. BRIEFED RSC/RCR	YES	<input checked="" type="checkbox"/>	NOT AVAILABLE	33. PMSV UHF 348.8 VHF 134.1	34. ATTACHMENTS	<input checked="" type="checkbox"/>	YES	NO	
35. REMARKS									
<p>TWA #05-024 FCST TS WITH LTG W/ 15NM OF CAAF VT: 1800Z - 2300Z</p> <p>OZR W/ #08-005 SFC WND GUSTS GTR THAN OR EQUAL TO 40KTS VT: 1900Z - 2100Z PHONE:</p> <p>AWA #05-022 LLWS OBSVD W/ 60NM OF CAAF VT: CURR - UFM 255-8385 <i>CR</i></p> <p>AWA #05-021 MDT TURBC OBSVD W/ 60NM OF CAAF FOR ACFT 12,500LBS OR LESS 255-8397</p> <p>VT: CURR - UFM</p> <p>*TURBULENCE FOR ACFT GROSS WEIGHT LESS THAN 12,500 POUNDS KDHN, KEDN, KHEY, K79J, KGZH SAME AS KOZR / KTOI, KPRN, KMYC, KMGH, KMXF, KEUF, KLSF, KCSG SAME AS KMGH / KCEW, KNSE, K0J4, KPNS, KHRT, KVPS, KMAI, K1J0, KTLH, KPEN, KNPA, KPAM, KBIJ, KBGE SAME AS KABY</p>									

Block
Number

- 32 - RCR reading. Not available for the IFR DD Form 175-1.
- 33 - PMSV frequency. The forecaster requests PIREPs (UHF 348.8 or VHF 134.1) for any significant or unforecast weather.
- 34 - Attachments, if any.
- 35 - Remarks. Used to comment on significant phenomena not covered elsewhere. One common remark is A/S, which means that all stops within 100 NM are the same or better as a given destination. If A/S is not applicable, the destinations will be listed and grouped according to forecast weather conditions.

5. Briefing Record.

PART V - BRIEFING RECORD			
36. WX BRIEFED TIME E 15:45	z	37. FLIMSY BRIEFING NO. PM (1730Z - 0000Z)	38. FORECASTER'S INITIALS LS/DR
40. VOID TIME 1715	z	41. EXTENDED TO/INITIALS 1945/ LS	42. WX REBRIEF TIME/INITIALS 1815/ LS
39. NAME OF PERSON RECEIVING BRIEFING			
43. WX DEBRIEF TIME/INITIALS			

Block
Number

- 36 - Weather briefed time. Initial weather brief time (Zulu) for each applicable flying period.
- 37 - Flimsy briefing number. Applicable flying period and valid times posted in this block.
- 38 - Forecaster's initials.
- 39 - Typically not included on the IFR DD Form 175-1.
- 40 - Void time. Initial weather void time (Zulu) for each applicable flying period.
- 41 - Extended to/initials. The new void time is entered in this block, along with the forecaster's initials.
- 42 - Wx rebrief time/initials. The new brief time is entered in this block, along with the forecaster's initials.
- 43 - Wx debrief time/initials. Typically not included on the IFR DD Form 175-1.

APPENDIX H

BREAKDOWN OF THE MISSION EXECUTION FORECAST (MEF)

1. Part I: Date/Time/Briefer.

6TH WEATHER FLIGHT MISSION EXECUTION FORECAST			
DATE: 02 Feb 05	VALID PERIOD: PM (1800Z - 0100Z)	ISSUE TIME 02/ 1645Z	Briefer: GM, JW

2. Part II: Solar & Lunar Data (Local Time). The percent illumination is valid for 2400L.

SOLAR & LUNAR DATA (all times are LOCAL)							
Sunrise	Sunset	EENT	Moonrise	Moonset	Azimuth	Elevation	% Illum
03/ 0634L	02/ 1719L	02/ 1813L	03/ 0123L	02/ 1105L	106 °	-17 °	40 %

3. Part III: Flight level winds and temperatures (degrees Celsius) are listed 010-080.

FLIGHT LEVEL WINDS & TEMPS (All heights are MSL)				MIN FZ LVL: >100	
FLT LEVEL	WIND	TEMP	FLT LEVEL	WIND	TEMP
010	11020KT	+05 C	050	21020KT	+08 C
020	14025KT	+07 C	060	21020KT	+08 C
030	17025KT	+09 C	070	23020KT	+07 C
040	19020KT	+10 C	080	23025KT	+05 C

4. Part IV: Any flight hazards are identified in this block. Turbulence is identified by type, intensity, and levels. Icing is identified by type, intensity, and levels. Thunderstorms are identified by type, coverage, and maximum tops.

FLIGHT HAZARDS (All heights are MSL)		
TURBULENCE (Category I Aircraft)	LIGHT	SFC-030 ALL AREAS
ICING	NONE	
THUNDERSTORMS	NONE	
LOW LEVEL WIND SHEAR	NONE	

5. Part V: KOZR & Area Forecast Data. This block lists the maximum/minimum temperatures (degrees Celsius) at KOZR and in the local flying area, the minimum ALSTG at KOZR and in the local flying area, the maximum PA/DA at KOZR and in the local flying area, the minimum ceiling at KOZR and in the local flying area, and the minimum visibility/weather at KOZR and in the local flying area.

KOZR & AREA FORECAST DATA							
	MAX TEMP	MIN TEMP	MIN ALSTG	MAX PA	MAX DA	MIN CIG	MIN VIS & WX
KOZR	8C (46F)	5C (41F)	30.12	120 FT	-590 FT	003	1 SHRA BR
AREA	10C (50F)	4C (39F)	30.12	320 FT	-10 FT	003	1 SHRA BR

6. Part VI: MEF Area Forecasts. This block breaks down the forecast for each MEF forecast area for the entire period. In the example below, all areas (except Fixed Wing) are forecast to have 600-foot ceilings and 5 SM visibility with light rain (-RA) and mist (BR), and isolated conditions of 300-foot ceilings and 1 SM visibility with moderate rain showers (SHRA) and mist (BR). Appendix I defines each of the seven MEF forecast areas.

AREA FORECASTS (All heights are AGL)	
GOLDFISH	10012G20KT 5SM -RA BR SCT003 BKN006 OVC010 ISOLD 18Z - 01Z: 1SM SHRA BR BKN003 OVC006
VANGUARD N	10012G20KT 5SM -RA BR SCT003 BKN006 OVC010 ISOLD 18Z - 01Z: 1SM SHRA BR BKN003 OVC006
VANGUARD C	10012G20KT 5SM -RA BR SCT003 BKN006 OVC010 ISOLD 18Z - 01Z: 1SM SHRA BR BKN003 OVC006
VANGUARD S	10012G20KT 5SM -RA BR SCT003 BKN006 OVC010 ISOLD 18Z - 01Z: 1SM SHRA BR BKN003 OVC006
HAWK	10012G20KT 5SM -RA BR SCT003 BKN006 OVC010 ISOLD 18Z - 01Z: 1SM SHRA BR BKN003 OVC006
BEARCAT	10012G20KT 5SM -RA BR SCT003 BKN006 OVC010 ISOLD 18Z - 01Z: 1SM SHRA BR BKN003 OVC006
FIXED WING	09012G20KT 5SM -RA BR SCT005 BKN008 OVC015 ISOLD 18Z - 23Z: 1SM SHRA BR BKN005 OVC008 10012G20KT 5SM -RA BR SCT003 BKN006 OVC010 ISOLD 23Z - 01Z: 1SM SHRA BR BKN003 OVC006

7. Part VII: Planning Data. This block gives planning data for the next flying period. Planning data includes a forecast condition for each forecast area (VFR, marginal VFR, or IFR), as well as maximum temperature (degrees Celsius) and maximum PA (in feet) for KOZR. There is also space for any remarks.

FOR PLANNING ONLY NI PLANNING DATA FORECASTS (All heights are AGL) ***FOR PLANNING ONLY***							
AREA FORECAST	Goldfish	Vanguard N	Vanguard C	Vanguard S	Hawk	Bearcat	Fixed Wing
CONDITION	IFR ENT PD	IFR ENT PD	IFR ENT PD	IFR ENT PD	IFR ENT PD	IFR ENT PD	IFR ENT PD
NI KOZR MAX TEMP 6C							
NI KOZR MAX PA 160FT							

8. Part VIII: Contact Information. This block lists FRWXOPS's commercial/DSN telephone and fax numbers and UHF/VHF PMSV frequencies.

CONTACT 6TH WEATHER FLIGHT		
FORECASTER PHONE	PMSV	FAX
(334) 255-8385 (DSN 558-8385)	VHF 134.1 UHF 348.8	(334) 255-8521 (DSN 558-8521)

9. Part IX: Weather Watches, Warnings, and Advisories. This block lists all weather watches, warnings, and advisories that are in effect or are forecast to be in effect during the period.

WEATHER WATCHES, WARNINGS, ADVISORIES			
Type	Number	Valid Time	Description
AWA	#02-002	VT: CURR - UFN	SFC WND 20KTS OR GTR OBSVD W/I 60NM OF CAAF

APPENDIX I

MEF FORECAST AREAS DEFINED

1. The MEF includes seven forecast areas. In the context of this weather plan and all forecast products issued by FRWXOPS, these seven forecast areas are:

a. **BEARCAT.** Synonymous with Area of Operations (AO) Bearcat, as defined in Fort Rucker Reg 95-2. Specific airfields include High Falls Stagefield, TriCounty MAP, and Marianna MAP.

b. **HAWK.** Synonymous with AO Hawk, as defined in Fort Rucker Reg 95-2. Specific airfields include Molinelli Range, Tabernacle Stagefield, Hunt Stagefield, Hatch Stagefield, Hooper Stagefield, Ech Stagefield, and Goldberg Stagefield.

c. **FIXED WING.** Synonymous with Fixed Wing Training Areas A and B, as defined in Fort Rucker Reg 95-2. Specific airfields include Blakely, GA.

d. **VANGUARD.** The boundaries of VANGUARD are the same as AO Vanguard, as defined in Fort Rucker Reg 95-2. However, in an effort to provide a more detailed forecast, we will refer to VANGUARD NORTH, VANGUARD CENTRAL, and VANGUARD SOUTH, as defined below.

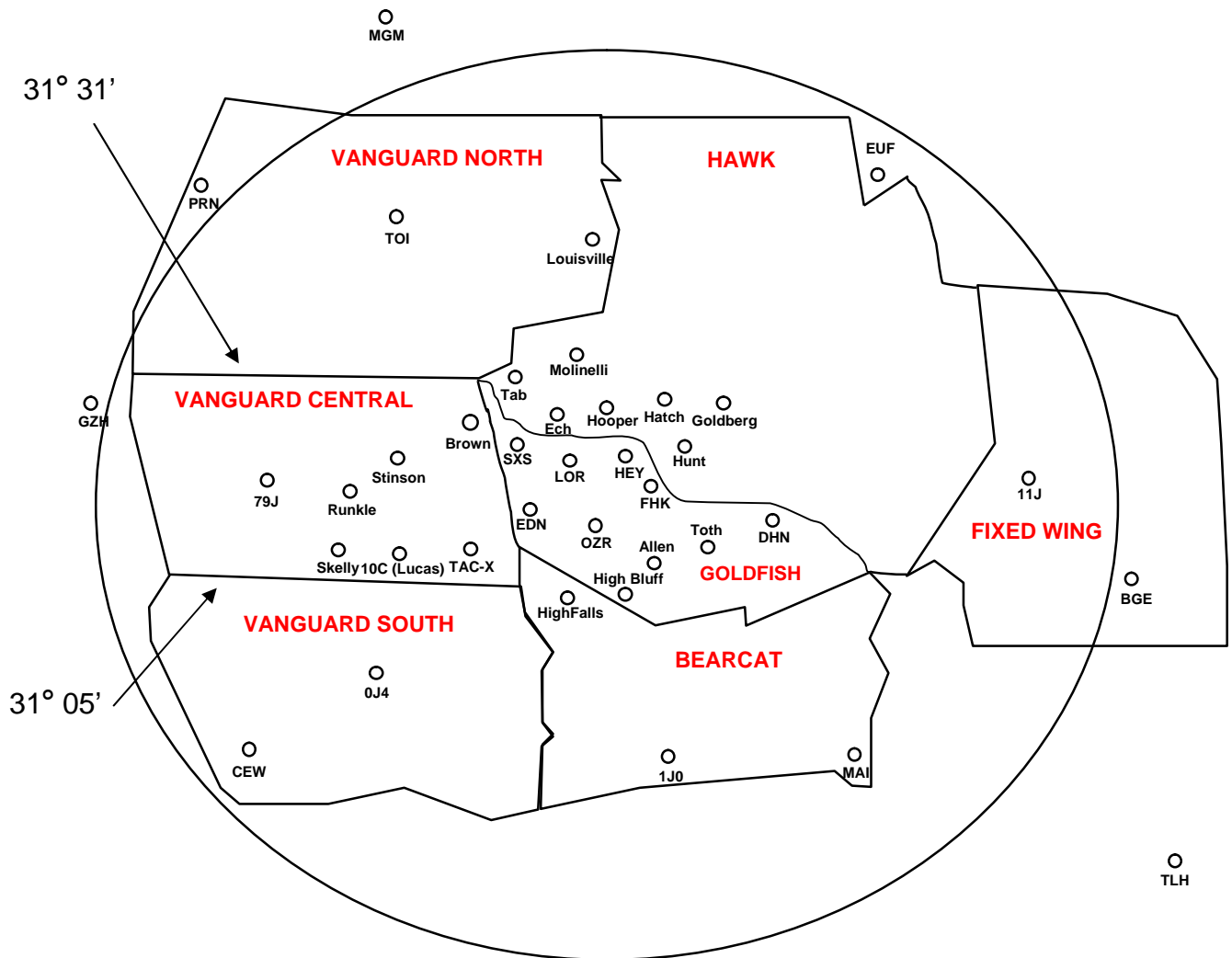
(1) **VANGUARD NORTH.** The southern boundary is a parallel line along 31° 31' (north of Gantt Lake but south of Wolfpit). Specific airfields include Troy MAP, Louisville Stagefield, and Greenville MAP.

(2) **VANGUARD CENTRAL.** The northern boundary is a parallel line along 31° 31' (north of Gantt Lake but south of Wolfpit). The southern boundary is a parallel line along 31°05' (bisects Hacoda; north of Florala but south of Samson). Specific airfields include South Alabama RAP, Stinson Stagefield, Runkle Stagefield, Skelly Stagefield, Brown Stagefield, 10C (Lucas Stagefield), and TAC-X.

(3) **VANGUARD SOUTH.** The northern boundary is a parallel line along 31° 05' (bisects Hacoda; north of Florala but south of Samson). Specific airfields include Florala MAP and Crestview, FL.

e. **GOLDFISH.** Class D Airspace. Specific airfields include Hanchey AHP, Knox AHP, Dothan RAP, Cairns AAF, Lowe AHP, Shell AHP, Highbluff Stagefield, Allen Stagefield, Toth Stagefield, and Enterprise RAP.

2. The seven MEF forecast areas are depicted below.



APPENDIX J

MEF SPECIFICATION CRITERIA

1. Specification Criteria. The VFR MEF specifies the onset and duration of the following elements:
 - a. Thunderstorms. Timing and coverage.
 - b. Weather watches, warnings, and advisories that are in effect or will be in effect during the period.
 - c. Surface winds gusting to ≥ 20 knots within the local flying area.
 - d. Ceiling. When a ceiling decreases to less than or, if below, increases to equal or exceed:
 - (1) 3,000 feet (TAF).
 - (2) 1,500 feet (Head Hunter night minimum).
 - (3) 1,000 feet (Lear Siegler Services, Inc. (LSSI) Primary Division launch minimum; Head Hunter day minimum; LSSI Advanced Division, 23d Flying Training Squadron (23 FTS), FLATIRON, AH-64/D, OH-58A/C/D, UH-60, TH-67, CH-47 night training minimum).
 - (4) 700 feet (LSSI Primary Division launch minimum and stagefield training minimum; 23 FTS day training minimum).
 - (5) 600 feet (Air Force Detachment (AF Det) 5 circling minimum).
 - (6) 500 feet (FLATIRON night training on Cairns AAF minimum; AH-64/D, OH-58A/C/D, UH-60, UH-1, TH-67, CH-47 day training minimum).
 - (7) 300 feet (FLATIRON day training minimum; LSSI Advanced Division Special VFR minimum).
 - (8) 200 feet (AF Det 5, C-12 Reserves launch minimum; LSSI Advanced Division day training minimum).
 - (9) 100 feet (MEDEVAC launch minimum).
 - e. Visibility. When visibility decreases to less than or, if below, increases to equal or exceed:
 - (1) 3 SM (LSSI Primary Division launch minimum; LSSI Advanced Division, 23 FTS, FLATIRON, AH-64/D, OH-58A/C/D, UH-60, UH-1, TH-67, CH-47 night training minimum; Head Hunter day/night minimum).
 - (2) 2 SM (AF Det 5 circling minimum; 23 FTS day training minimum).
 - (3) 1 SM (LSSI Primary Division launch minimum and stagefield training minimum; FLATIRON night training on Cairns AAF minimum; AH-64/D, OH-58A/C/D, UH-60, TH-67, UH-1, CH-47 day training minimum).
 - (4) 1/2 SM (LSSI Advanced Division Special VFR minimum; AF Det 5, C-12 Reserves launch minimum; FLATIRON, AH64/D, OH-58D, UH-60 day training minimum).
 - (5) 1/4 SM (LSSI Advanced Division day training minimum; MEDEVAC launch minimum).

MEF AMENDMENT CRITERIA

2. Amendment Criteria. The VFR MEF is amended when any of the following elements have been incorrectly forecast:

- a. Thunderstorms. Timing and coverage.
- b. Weather Watches, Warnings, or Advisories. Weather watch, warning, or advisory criteria are met and were not forecast or, if specified, are no longer expected to occur.
- c. Surface Winds. When the forecast surface windspeed, including gusts, is in error by 10 knots or more.
- d. Surface Winds. When the direction of the forecast surface winds is in error by 30 degrees or more, and the predominant windspeed, including gusts, is over 15 knots.
- e. Ceiling. When ceilings decrease to less than or, if below, increase to equal or exceed 3,000 feet, 1,500 feet, 1,000 feet, 700 feet, 600 feet, 500 feet, 300 feet, 200 feet, or 100 feet.
- f. Visibility. When visibility decreases to less than or, if below, increases to equal or exceed 3 SM, 2 SM, 1 SM, 1/2 SM or 1/4 SM.

APPENDIX K

US ARMY-OWNED METEOROLOGICAL EQUIPMENT

Army-Owned Meteorological Equipment. The USAACE owns weather equipment at several basefields and stagefields. NAVAIDs is responsible for the following wind sensors:

1.	<u>Airport</u>	<u>Equipment</u>	<u>Height of Sensor</u>
	Troy MAP	Wind Set	15 feet
	South Alabama RAP	Wind Set	15 feet
2.	<u>Basefield</u>	<u>Equipment</u>	<u>Height of Sensor</u>
	Hanchey AHP	Wind Sets (2)	15 feet
	Lowe AHP	Wind Sets (2)	15 feet
	Shell AHP	Wind Set	15 feet
3.	<u>Stagefield</u>	<u>Equipment</u>	<u>Height of Sensor</u>
	Allen	Wind Sets (2)	15 feet
	Brown	Wind Set	45 feet
	Ech	Wind Set	45 feet
	Goldberg	Wind Set	35 feet
	Hatch	Wind Set	5 feet
	Highbluff	Wind Set	45 feet
	Hooper	Wind Set	55 feet
	Hunt	Wind Set	35 feet
	Lucas (10C)	Wind Set	30 feet
	Molinelli	Wind Set	15 feet
	Runkle	Wind Set	70 feet
	Skelly	Wind Set	55 feet
	Stinson	Wind Set	45 feet
	Tabernacle	Wind Set	35 feet
	Toth	Wind Set	45 feet

APPENDIX L

ELECTRO-OPTICAL TACTICAL DECISION AID WORKSHEET

Name:

Unit:

Phone Number:

Date:

Date Needed:

1. Range (Circle One): SMOKY HILL RAZORBACK CRYPT HARDWOOD

OTHER (COMPLETE BELOW)

Range: _____ LAT/LON: _____ ELEVATION: _____ FT

2. Time on Target: _____ (Z)

3. IR or TV SENSOR INFORMATION

SENSOR TYPE (Circle One)	SENSOR HEIGHT (Attack Altitude in hundreds of feet AGL)	SENSOR ID#	VIEWING DIRECTION (0° - 360°)	Complexity/ Clutter* (Circle One)
IR TV				NONE LOW MEDIUM HIGH

** (Scene complexity is used for the IR model; clutter is used for the TV model)*

4. TARGET INFORMATION (Select up to 2 targets for each run.)

TARGET TYPE	TARGET HEADING (0° - 360°)	TARGET OPERATING STATE (Circle One)	TARGET SPEED (KNOTS)
		OFF IDLE MOVING	
		OFF IDLE MOVING	

5. SLOPE OF TARGET AREA: _____ DIRECTION DOWNSLOPE FACES: _____

6. TARGET BACKGROUND (Circle the appropriate background characteristics, if known, for up to 3 backgrounds.)

VEGETATION:

DENSITY	COVERAGE	SOIL MOISTURE
DORMANT	DENSE	DRY
INTERMEDIATE	INTERMEDIATE	INTERMEDIATE
GROWING	SPARSE	WET

SOIL:

TYPE	SURFACE MOISTURE	DEPTH MOISTURE
AVERAGE	DRY	DRY
LOAM	INTERMEDIATE	INTERMEDIATE
SAND	WET	WET
CLAY		
PEAT		
GRAVEL		
DESERT SAND		

SNOW:

SNOW CONDITION	TYPE	DEPTH (INS)
COMPACTED	NEW	
WINDY REGION	OLD	
LATE IN SEASON	RAINED UPON	
TUNDRA	SURFACE MELTED	
UNDISTURBED		

CONCRETE:

TYPE	SURFACE	WETNESS
ROAD	UNCOLORED	DRY
SIDEWALK	BLACK	INTERMEDIATE
RUNWAY		WET
PARKING LOT		
BRIDGE		
HEAVY PAD		

ASPHALT:

TYPE	SURFACE	WETNESS
ROAD	AGED	DRY
SIDEWALK	NEW	INTERMEDIATE
RUNWAY		WET
PARKING LOT		
BRIDGE		

7. PRODUCT(S) REQUESTED: CIRCLE SELECTION(S)

LOCK-ON RANGE

MAXIMUM DETECTION RANGE

HOT ON COLD

THERMAL CROSSOVER

ATTACK TIMING

ATTACK AXIS

APPENDIX M

USAACE WEATHER SUPPORT REQUIREMENTS/CUSTOMER ACTIONS

The following table lists weather events or thresholds that impact or potentially impact Fort Rucker operations. Customer actions to these weather events or thresholds are also listed.

<u>Weather Event</u>	<u>Affected Unit</u>	<u>Impact</u>	<u>Customer Action</u>
Tornadoes			
Tornado	All	Threat to post populace, resources	Sound alarm; take cover; cancel flight ops.
Wind Thresholds			
Wind ≥ 50 knots	IOC	Possible damage to post	Override CCTV; implement HURCON Plan, if appropriate.
	110 AB	Possible aircraft damage	Cancel flights; recover aircraft; hangar/secure aircraft.
	Aircraft	Possible damage to aircraft and equipment	Stack, hangar, or secure aircraft.
	Logistics Mgmt Div		Secure flight line equipment.
	USAATTC	Possible damage to aircraft	Hangar sensitive aircraft.
	DPW	Damage to unsecured job sites	Secure job sites and materials.
Wind 35-49 knots	110 AB	Possible aircraft damage	Cancel or hold flights. 45 knots is runup limit for UH-60, AH-64, TH-67, and OH-58A/C/D.
	USAATTC	Possible damage to aircraft	Hangar sensitive aircraft.
Wind ≥ 30 knots	110 AB	Hazard to rotary wing aircraft during runup	Delay flights. Affects CH-47 and UH-1 aircraft.
Gust Spread ≥ 15 knots	110 AB	Hazard to rotary wing aircraft during runup	Delay flights. Affects UH-1, TH-67, and OH-58A/C/D models.
Wind ≥ 20 knots	110 AB	Decision point	Instructor decides if student can solo. Alerts crews that winds could approach airframe limits.
Gusty	Chief of Staff (CS)/Secretary of the General Staff (SGS)	Outdoors formation undesirable	Move formation indoors.
LLWS	110 AB	Hazard to light aircraft	Cancel or hold flights.
X-wind ≥ 25 knots	110 AB/Det 5	Aircraft restriction	Cancel or hold flights.
Flight/Ground Hazards			
Turbulence			
Moderate+	110 AB	Hazard to light aircraft	Cancel student solo flights.
Severe+	110 AB	Hazard to aircraft	Cancel flights.
Icing			
Moderate+	110 AB	Hazard to rotary wing aircraft	Cancel flights.
Lightning within 5 NM	110 AB	Hazardous to operations	Suspend operations.
Lightning within 10 NM	110 AB; Refuel	Provides a “heads up” that lightning is in the area	Maintain situational awareness, as lightning within 5 NM may soon occur
Lightning within 15 NM	110 AB	OH-58D avionics (expensive to repair if struck)	Hangar OH-58Ds. ⁽¹⁾

<u>Weather Event</u>	<u>Affected Unit</u>	<u>Impact</u>	<u>Customer Action</u>
Precipitation			
Hail ≥ 1/2 inch	Aircraft Logistics Mgmt Div	Aircraft damage	Hangar part of USAACE fleet.
≥ 2 inches rain in 12 hours	IOC	Flooding threat	Command and control for flood control.
Freezing precipitation	DPW	Affects outside activity	Defer outside work.
≥ 1/2 inch snow	DPW	Affects outside activity, road conditions	Defer outside work; sand bridges/roads.
Any type	IOC	Road conditions	Coordinate snow removal.
	CS/SGS	Outdoors formation undesirable	Move formation indoors.
Other			
< 1,000 feet/ 3 SM (N1 period)	110 AB	Prevents VFR recovery	Cancel flights ⁽²⁾ ; recover aircraft. ⁽²⁾
< 1,000 feet/ 3 miles	USAATTC	Limits testing	Delay or cancel flights.
< 200 feet/ 1/2 miles	USAATTC	Limits testing	Delay or cancel flights.
< 1,500 ft/ 5 SM (N1 period)	ARAC	Impacts hours of operation	Extend operating hours in order to recover Army aircraft (radar approaches, low altitudes, etc).
Temperatures			
≤ 00 degrees Celsius for 5+ hours	DPW	Outdoor pipes may freeze.	Make provisions to prevent freezing and bursting.
< M06 degrees Celsius for 1+ hour	DPW	Outdoor pipes may freeze.	Alert standby crews during nonduty hours for emergency repairs and cleanup.

Notes:

⁽¹⁾ Original Commanding General (Major General Robinson) policy levying requirement, 9 March 1994. Requirements to hangar OH-58D and other aircraft may vary, based on the season and thunderstorm threat.

⁽²⁾ As applicable, for the pilots scheduled for training.

APPENDIX N

CUSTOMER MISSION-LIMITING WEATHER THRESHOLDS

Aircraft Weather Thresholds on MEF			
UH1 KOZR/KLOR/KSXS CAT 1 23RD/FI&MVAC	RESTRICTIONS	NO GO DAY	NO GO NIGHT
X WIND		≥ 30 KTS HOVER	≥ 30 KTS HOVER
TAILWIND		≥ 30 KTS	≥ 30 KTS
WIND VELOCITY		≥ 30 KTS	≥ 30 KTS
GUST SPREAD		≥ 15 KTS	≥ 15 KTS
ICING		ALL	ALL
TURBULENCE	MDT	SVR/EXT	SVR/EXT
THUNDERSTORMS/LIGHTNING		ANY	ANY
CEILINGS	-	≤700/≤300 FI/≤100 MV	≤1000/≤500 FI/≤100 MV
VISIBILITY	-	≤2/≤1/2 FI/≤1/4 MV	≤3/≤1 FI/≤ 1/4 MV
TH67 KOZR/KSXS CAT 1 LSSI P/A	RESTRICTIONS	NO GO	NO GO
X WIND		≥ 35 KTS HOVER	≥ 35 KTS HOVER
TAILWIND		≥ 35 KTS	≥ 35 KTS
WIND VELOCITY		≥ 45 KTS	≥ 45 KTS
GUST SPREAD		≥ 15 KTS	≥ 15 KTS
ICING		ALL	ALL
TURBULENCE	MDT	SVR/EXT	SVR/EXT
THUNDERSTORMS/LIGHTNING		ANY	ANY
CEILINGS	-	≤1000PO/≤700PF/≤500S/≤200AO	≤1000
VISIBILITY	-	≤2	≤3
UH-60 KLOR CAT 2 (&HEADHUNTERS)	RESTRICTIONS	NO GO	NO GO
WIND VELOCITY		≥ 45 KTS	≥ 45 KTS
ICING	TRACE/LGT/MDT	SVR	SVR
TURBULENCE		SVR/EXT	SVR/EXT
THUNDERSTORMS/LIGHTNING		ANY	ANY
CEILINGS	-	≤500/≤1000 HUNTERS	≤1000/≤1500 HUNTERS
VISIBILITY	-	≤1/2/≤3 HUNTERS	≤3
CH47 KFHK CAT 2	RESTRICTIONS	NO GO	NO GO
WIND VELOCITY		≥40	≥40
ICING	TRACE/LGT	MDT/SVR	MDT/SVR
TURBULENCE	MDT	SVR/EXT	SVR/EXT
THUNDERSTORMS/LIGHTNING		ANY	ANY
CEILINGS	-	≤500	≤1000
VISIBILITY	-	≤1	≤3
OH-58 KSXS/KHEY AH64 KHEY CAT 2	RESTRICTIONS	NO GO	NO GO
WIND VELOCITY		≥ 45 KTS	≥ 45 KTS
ICING		ALL	ALL
TURBULENCE	MDT	SVR/EXT	SVR/EXT
THUNDERSTORMS/LIGHTNING		ANY	ANY
CEILINGS	-	≤500	≤1000
VISIBILITY	-	≤1 OH58/≤1/2 AH64	≤3
C12(BE20) KOZR	RESTRICTIONS	NO GO	NO GO
X WIND		≥ 25 KTS	≥ 25 KTS
ICING		SVR	SVR
TURBULENCE		SVR/EXT	SVR/EXT
THUNDERSTORMS/LIGHTNING		ANY	ANY
CEILINGS	-	≤200	≤200
VISIBILITY	-	≤1/2	≤1/2